ANNUAL SESSION · ATLANTIC CITY · JUNE 11-15, 1951

This Issue Exceeds 150,000 Copies

THE JOURNAL

OF THE

American Medical Association

VOLUME 145, No. 3 • Subscription, $15.00
Single Copy, 45 Cents

Published Weekly at
535 North Dearborn Street, Chicago 10, Illinois

January 20, 1951

ORIGINAL ARTICLES

EFFECTS OF AIR TRANSPORTATION ON CLINICAL CONDITIONS....129
Colonel Benjamin A. Strickland Jr., Medical Corps, United States Air Force, and James A. Rafferty, M.D., Randolph Field, Texas

EFFECT OF ACTH IN ACUTE RHEUMATIC CARDITIS....133
May G. Wilson, M.D., and Helen N. Helper, M.D., New York

SPASTIC SPINAL PARALYSIS RESPONDING TO POTASSIUM THERAPY....138
Eric Barrett, M.D., Beverly Hills, Calif.

VAGOTOMY FOR IDIOPATHIC ULCERATIVE COLITIS AND REGIONAL ENTERITIS....140
Philip Thorek, M.D., Chicago

UNIPOLAR PRECORDIAL ELECTROCARDIOGRAMS IN VENTRICULAR ANEURYSM....147
George A. Pipilis, M.D., Athens, Greece, and Paul H. Wesolka, M.D., Ph.D., Chicago

THE CORNELL MEDICAL INDEX-HEALTH QUESTIONNAIRE....152
Keeve Brodman, M.D.; Albert J. Erdmann Jr., M.D.; Irving Lorge, Ph.D., and Harold G. Wolff, M.D., New York

CLINICAL NOTES

CALCULI IN A DILATED STUMP OF THE CYSTIC DUCT, PREOPERATIVE VISUALIZATION....157
Michael Weingarten, M.D., New York

COUNCIL REPORTS

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES....159

EDITORIALS

Formation of American Medical Education Foundation....160
Deferment of Students in Time of National Emergency....160
Distribution of Physicians in the United States....162
Cardiac Effects of Nor-Epinephrine....162
Journal of Neuropathology and Clinical Neurology....162

ORGANIZATION SECTION

Medical Legislation Before Eighty-First Congress....163
State Legislation....163

GOVERNMENT SERVICES

Army....164
Navy....164
Public Health Service....165
Veterans Administration....165

REGULAR DEPARTMENTS

Medical News....166
Examinations and Licensure....170
Meetings....170
Deaths....171
Foreign Letters:
Paris—Fifth International Congress on Cancer....172
Brazil—Kartagener's Triad. Meningitis Due to Escherichia Coli....173
Ecuador—Annual Medical Meeting...173
Correspondence:
Food and Allergy. Maternal Deaths. Relief of Prickly Heat with Vitamin C..174
Medical Motion Pictures....176
Medical Literature Abstracts....177
Book Reviews....189
Queries and Minor Notes:
Recovery from Brucellosis. Spinal Fluid Examinations in Poliomyelitis. Diabetic Feels Better with Trace of Sugar in Urine. Strabismus in Young Infants. High Grade Heart Block. Sulfonamide Concentration in Eggs and Chicken. Sterility. Mouth to Mouth Artificial Respiration....191

WASHINGTON NEWS

Armed Forces Medical Policy Council. Physicians Rejected by Army. Survey of Educational and Health Needs. Military Notes. Dr. Wilder to Direct New Institute. Legislative Notes. Agencies....Adv. Page 33
Tonics and Sedatives....Adv. Page 46
Books Received....Adv. Page 68

New (4th) Edition—Major's Physical Diagnosis

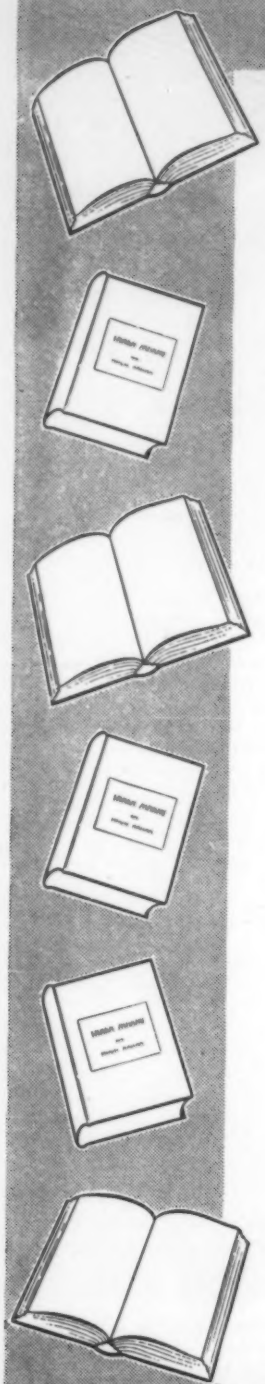
One of the significant changes in the *New (4th) Edition* of this standard work is the inclusion of new information on *pathologic physiology and its special applications to physical diagnosis.* A number of new illustrations have been added and other important improvements made.

As in previous editions, the author provides the reader with useful help on the technics of inspection, percussion, palpation and auscultation—how to *see,* to *hear* and to *feel* the physical signs that indicate the presence of disease. An entire chapter is devoted to *pain.*

By Ralph H. Major, M.D., Professor of Medicine, University of Kansas. 446 pages, 6" x 9", with 469 illustrations. $6.50. *New (4th) Edition.*

See SAUNDERS advertisement on next 2 pages

REED M NESBIT MD
UNIV HOSPITAL
ANN ARBOR MICH



Published by Saunders

... begins where other textbooks end

Sodeman's PATHOLOGIC PHYSIOLOGY

This new book begins where the textbook of normal physiology ends. It tells you about *disturbed function* (frequently giving the normal as a basis for comparison) and explains *how* altered physiology is manifested in the symptoms and signs of disease.

You'll find here the answers to such basic questions as:

1. How does cardiac hypertrophy lead to congestive heart failure?
2. How can you evaluate pulmonary function in diseases of the lung?
3. How does pain develop in peptic ulcer?
4. What are today's concepts of the mechanisms of hypertension?
5. What are the causes of the various symptoms of carcinoma of the stomach?
6. What is the status of vitamin B_{12} in the macrocytic anemias?

The answers to these and hundreds of other similar questions are important to you in a number of ways. They are a great help, of course, in diagnosis—they enable you to understand the significance of symptoms and signs, instead of merely memorizing them. Further, they provide you with the basis of really logical therapy, by pointing out the *disturbed physiology* that is at the root of the trouble. Lastly, they assist you in evaluating degrees of improvement or cure in terms of restored function.

Practically every one of the book's 25 contributors is engaged in the teaching or practice of clinical medicine. The suggestions they offer are *clinical* ones, concerned with illness, patients, symptoms, signs—with the kind of medicine you know and practice.

By 25 Contributors. Edited by WILLIAM A. SODEMAN, M.D., F.A.C.P., The William Henderson Professor of the Prevention of Tropical and Semi-Tropical Diseases, Tulane University of Louisiana School of Medicine. 808 pages, 6½" x 9¼", with 146 illustrations and 30 Tables. $11.50. *New.*

Use SAUNDERS Order Form

THE JOURNAL of the American Medical Association is published weekly by the American Medical Association. Subscription price, $15.00 a year, 45c a copy. Canadian $16.50. Foreign $19.00. Entered as second class matter June 25, 1885, at the Postoffice at Chicago, Ill., under act of March 3, 1879. Address all communications to American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois

THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 145, NO. 3 CHICAGO, ILLINOIS JANUARY 20, 1951
COPYRIGHT, 1951, BY AMERICAN MEDICAL ASSOCIATION

EFFECTS OF AIR TRANSPORTATION ON CLINICAL CONDITIONS

ANALYSIS OF 16,000 CASES REPORTED IN 1949

Colonel Benjamin A. Strickland Jr.
Medical Corps, United States Air Force
and
James A. Rafferty, M.D., Randolph Field, Texas

In peace, the transportation of patients is often a problem in medical practice. In war, the transportation of patients is one of the major activities of the medical departments of the armed forces.

Among the civilian population the necessity to transport a sick or injured person often requires special consideration by the attending physician.[1] Today much of the available expert specialized medical care is concentrated in medical centers. In many instances the patient requiring care must be transported to such a center. His physician is frequently consulted as to the most appropriate mode of travel, and in some situations he even makes arrangements for the patient's transportation. With the current general popularity of air travel, many patients elect to travel by airplane. Moreover, many of the regular air passengers have some type of illness or injury.

Until 1937 there was only slight opportunity to obtain through actual experience an appraisal of the effects of air transportation on clinical conditions. During that year the first large-scale use of aircraft for patient transportation was made by the Germans in the Spanish Civil War. It was notably successful. From 1939 to 1942 the European participants in World War II utilized air transportation for patients extensively and found it advantageous. Concurrently, commercial airlines in the United States found that a considerable number of patients were utilizing airplane transportation. Lovelace and Hargreaves [2] pointed out that in 1941 over 500 patients a month were being transported by air to or from Rochester, Minn. Several months later Tillisch, Stotler and Lovelace [3] analyzed the effects of airplane transportation on 200 patients. Their findings constituted the first comprehensive report on this subject to appear in American medical literature.

With the entrance of the United States into World War II, the development of air transportation in casualty movement was accelerated. The term "air evacuation" was coined, and the airplane was used on a scale of great magnitude by the Armed Forces for the transportation of casualties. Table 1 shows the number of patients transported by the United States Air Force from early 1942 through 1949.

During the years 1942 to 1946, the exigencies of war prevented detailed analyses of the effects of air transportation on military patients. The Air Force did, however, gain vast practical experience. From this wartime experience numerous competent observers reached unanimity of opinion that almost every patient suitable for transportation by any means is suitable for transportation by air. However, in the selection of a patient for possible transportation by air, certain important factors must be considered. The effects of air travel on certain diseases and injuries must be viewed critically and each case considered individually. The effects of ascent to altitude, both a reduction in barometric pressure and a corresponding decrease in partial pressure of oxygen in the inspired air, may have profound effects on certain pathological conditions. Oxygen may be required in certain cases during flight in which unpressurized aircraft are used. Entrapped air or gas in body cavities or in tissues will expand at altitude. For example, at an altitude of 10,000 feet (3,048 meters), a given quantity of air or gas will expand to one and one-half times its volume at sea level. This (Boyle's law) has considerable importance in the transportation of patients with conditions such as skull fracture, pneumothorax, acute abdominal injury or untreated penetrating wounds of the chest and abdomen. However, with thorough diagnostic study, proper screening and careful preparation, even patients with conditions such as these can be safely and advantageously transported by air. In military air evacuation, only one death has occurred since 1945.

Because of the proved advantages of air transportation of military patients, the Surgeon General of the Army requested in 1946 that air transportation be made the primary means of moving patients within the Continental United States.[4] On routes outside the

From the Departments of Air Evacuation and Biometrics, United States Air Force School of Aviation Medicine.
Read before the Section on Miscellaneous Topics at the Ninety-Ninth Annual Session of the American Medical Association, San Francisco, June 29, 1950.
1. Stovall, W. R.: Oxygen Requirements for Patients Traveling by Air, J. A. M. A. **141**: 619 (Oct. 29) 1949.
2. Lovelace, W. R., II, and Hargreaves, J.: Transportation of Patients by Airplane, J. Aviation Med. **13**: 2, 1942.
3. Tillisch, J. H.; Stotler, J. F., and Lovelace, W. R., II.: Study of the Effects of Airplane Transportation of 200 Patients, J. Aviation Med. **14**: 162, 1943.
4. Transfer of Military Patients, Letter File 705.1, Adjutant General's Office, United States Army: Gen. A.K.A.S.U. Nov. 8, 1946.

United States, air exacuation, along with evacuation by ocean-going hospital ships, was continued as a method of moving patients.

In June 1948, the Air Force and the Navy combined their air transport organizations into the Military Air Transport Service. To this service was assigned the mission of air transportation for the three Armed Forces, including the air transportation of patients. The Military Air Transport Service (MATS) air evacuation system reaches all areas of the world in which the United States armed forces are located.

Air transportation of patients proved so successful that in August 1949 it was adopted as the sole method of moving patients for the armed forces.[5] The use of hospital trains and ocean-going hospital ships was discontinued. With air evacuation, it was no longer necessary for large hospital ships to sail with only a fraction of their loads or to wait for enough patients (150 to 500) to make a voyage practicable. Aircraft carrying 20 to 60 patients are obviously more versatile and flexible than are either trains or ships. Great savings in scarce medical personnel and in public funds are being made by air evacuation.

TABLE 1.—*Air Transportation of Patients by the United States Air Force in All Parts of the World*

Year	Patient Flights
1942 and 1943	178,527
1944	545,004
1945	624,128
1946	13,959
1947	18,000
1948	18,078
1949	18,231
Total	1,410,927

A certain amount of recorded operational experience had to accumulate before detailed evaluation of air evacuation could be undertaken. In 1947 the United States Air Force School of Aviation Medicine initiated a survey of patients transported by air. The first report of this project was published by Duff, Pletcher and Cutler in 1948.[6] Because the number of case reports was limited and because the cases were selected, the authors reached no definitive conclusions except that a much more thorough investigation was warranted.

METHODOLOGY OF PRESENT STUDY

Early in 1949 the Commandant of the United States Air Force School of Aviation Medicine and the Air Surgeon of the Military Air Transport Service concluded arrangements which made available case reports on all patients transported by air. Graduate nurses, assigned to all air evacuation trips as flight nurses, completed reports like the accompanying form on all patients transported. These reports, completed at the end of each flight, listed diagnoses, symptoms occurring during flight, weather conditions, treatment necessary during flight, results of treatment and other information descriptive of medical aspects of the trip. Diagnoses were obtained from the clinical records prepared by the medical installation requesting air transportation.

All patients are routinely acceptable for air transportation unless they fall into two special groups which are based on criteria developed in 1947.[7] In this study the only selection factors employed followed these criteria. These two groups are those who are not normally acceptable for air transportation and those who require special consideration if they are transported. Those not normally acceptable are:

1. Patients in such poor physical condition that the successful completion of their evacuation is doubtful (unless life-saving measures are available at the destination hospital which are not available at the point of origin).

SUPPLEMENTARY REPORT OF PATIENTS EVACUATED BY AIR

Name——Rank——Sex——Age——

Date——From——To——

DIAGNOSIS (——Ambulatory; ——Litter)

——Surgical: Preoper.——; Postoper.——

SYMPTOMS DURING FLIGHT

1—None	7—Nausea	13—Intestinal gas	18—Cooperative
2—Pallor	8—Vomiting	14—Pain	19—Quiet
3—Sweating	9—Resp. difficulty	15—Chills	20—Morose
4—Cyanosis	10—Air hunger	16—Nervous tremors	21—Disturbed
5—Dizziness	11—Headache	17—Weak, tired	22—Combative
6—Mild G. I. upset	12—Earache		

SYMPTOMS OCCURRED

1—No symptoms
2—Before ascent
3—During ascent
4—At altitude
5—During descent
6—After landing

FLYING CONDITIONS

Altitude
1—Less than 5,000 ft.
2—5,000 to 10,000 ft.
3—10,000 ft. or more

Weather
1—Calm
2—Mild turbulence
3—Moderate turbulence
4—Severe turbulence

TREATMENT OF SYMPTOMS

1—None 3—Medication 5—Other (specify)——
2—Litter Rest 4—Oxygen

RESULT OF TREATMENT

1—No treatment	3—Effective	5—No relief
2—Improved without treatment	4—Some relief	6—Unknown

REMARKS

Signature——

2. Patients with fatal prognosis, in moribund or semimoribund state.

3. Patients whose illnesses present a health menace to other occupants of the aircraft or whose illnesses constitute a public health menace. These cases include quarantinable diseases (smallpox, typhus, cholera, plague, yellow fever, exanthems and other communicable diseases) where adequate measures to prevent spread are impracticable or not feasible.

4. Patients in shock.

5. Patients with coronary occlusion or angina pectoris, if an attack has occurred within 60 days.

6. Patients with severe anemia (less than 2,500,000 red blood cells and/or less than 50 per cent hemoglobin).

The clinical conditions requiring special consideration are:

1. Mental diseases. Special restraints, skilled attendants and proper sedation are necessary to transport disturbed mental patients by air.

2. Heart diseases. Patients with angina pectoris or coronary occlusion are considered for evacuation only when 60 or more days have elapsed since the last attack.

5. Worldwide Evacuation by Air of Military Patients, J. A. M. A. **141**: 540 (Oct. 22) 1949.

6. Duff, F. L.; Pletcher, K. E., and Cutler, S. J.: An Analysis of the Effects of Aerial Transportation of Patients, Report no. 1, Project no. 21-02-035, United States Air Force, School of Aviation Medicine, Randolph Field, Tex., 1948.

7. Military Air Transport Service Regulation no. 25-6, Headquarters, Military Air Transport Service, Washington, D. C., March 25, 1949.

3. Pneumothorax. When patients with pneumothorax are carried, equipment for thoracentesis should be available at all times and the senior medical attendant briefed prior to flight on the anatomical location of the pneumothorax. The therapeutic pneumothorax is the type which generally will cause the least difficulty in flight. Traumatic and spontaneous pneumothoraxes should be studied carefully prior to acceptance.

4. Severe asthma.

5. Recent severe internal hemorrhage. Both the underlying cause for hemorrhage and possible resulting anemia are considered.

6. Recent (within ten days) intrathoracic or intra-abdominal wounds or operations.

7. Skull fracture with loss of cranial bone or disturbance of cerebrospinal circulation.

8. Recent severe head injuries or suspected injury to the cranial contents.

9. Maxillofacial injuries; patients requiring intermaxillary fixation should not be carried unless the tie wires between the jaws are removed for the duration of the flight or replaced by elastics without disturbing the basic wiring in either the mandible or the maxillas.

Extremely few patients were rejected for air evacuation. For example, among a random sample of 2,796 patients, only five were considered unsuitable for movement by air.

During January to October 1949, inclusive, 16,020 case reports were obtained. These case reports were from all routes of the Military Air Transport Service air evacuation system throughout the world. Approximately three fourths of the reports were on flights within the Continental United States; the remainder were on flights outside or to the United States.

The 16,020 reports represented approximately 14,000 different patients. To illustrate, let us consider a patient with early tuberculosis who was stationed in Japan. After clearance for air evacuation, he was first flown from Tokyo to Guam, where the aircraft crew was changed. A new crew, including a different flight nurse, then flew this load of patients from Guam to Hawaii, where there was usually an overnight rest stop. The next flight of the trip was from Hawaii to California, with a different crew. On reaching California and after overnight rest, this patient was then flown to Fitzsimmons General Hospital, at Denver. Because this particular patient was attended by four different flight nurses, there were four case reports on the one person.

Since multiple flights occurred in a minority of the evacuation trips, they are not basis for criticism of the statistical analysis of 16,020 case reports. Moreover, flying conditions varied on the different flights of a patient trip. In the above illustration, a three to six day period was covered. Moreover, the flight over mountains from California to Colorado was necessarily made at a higher altitude than were the flights over the ocean. It is clear, then, that each case report covers one patient flight and that environmental conditions were probably different for each flight in the event of multiple flights by the same patient.

In general, the routes, altitudes, weather conditions and types of aircraft utilized were identical with conditions of commercial airline operations. No cases transported in pressurized cabin type aircraft were included in this study. The C-47 (DC-3) and the C-54 (DC-4) types of aircraft were employed. About two thirds of the patients were ambulatory and used reclining chairs similar to those in commercial aircraft. The other third were moved on litters or stretchers.

The diagnoses on the reports were coded according to the three digit code of the International Statistical Classification.[8] Then the diagnoses and self-coded items on the report were transferred to punch cards to facilitate statistical treatment of these data. Nearly 1,000 different diagnoses were recorded. Certain few diagnosis groups were arbitrarily chosen for presentation and analysis in this paper. More complete analyses will be given in subsequent papers.

Symptoms reported did not lend themselves well to an arbitrary classification as to probable etiology. It is obviously impracticable to attempt to distinguish whether or not symptoms shown in a given case were due to (1) the disease itself, (2) motion sickness or (3) effects of altitude (decreased barometric pressure and lowered oxygen tension). In many instances the disease itself was the cause of symptoms; in others the cause was (1) and (2) combined, and in only a very small number of instances did (3) enter into the picture, as will be shown subsequently. For purposes of statistical recording the 22 symptoms (see facsimile report) were compiled in groups. Categories 2 through 17 indicate general subjective and objective symptoms caused by any one or any combination of the three factors mentioned above. Categories 1, 18 and 19 obviously indicate absence of any symptoms; 20, 21 and 22 indicate reactions expected of psychiatric patients.

TABLE 2.—*Symptoms Occurring During Flight Among Patients Air Transported by the Military Air Transport Service (MATS) in 1949*

Patient Reaction	Patients, Number	Relative Frequency, Per Cent
No symptoms	14,885	93.0
General symptoms	986	6.1
Psychiatric symptoms	149	0.9
Total	16,020	100.0

COMMENT

The principal observation in this study is that the incidence rate of symptoms during flight was only 7 per cent for the entire series of 16,020 case reports. This suggests that air transportation of patients is attended by far fewer symptoms than was previously presumed. The majority of symptoms reported were apparently due, at least in part, to motion sickness. Commercial airlines report a motion sickness incidence rate of 2 to 5 per cent on all flights. Tillisch and co-workers [3] have observed that motion sickness in airplanes occurs more frequently among patients than among healthy persons. Thus the 6.1 per cent incidence rate of general symptoms in our series is low. The 0.9 per cent incidence rate of psychiatric symptoms is consistent with the proportion of psychiatric patients transported. No patients in this series died in flight, and no flights were terminated because of the appearance of alarming symptoms.

8. International Statistical Classification of Diseases, Injuries and Causes of Death, United Nations, World Health Organization, Ottawa, Canada, 1947.

Altitudes at which patients were transported on all routes of the MATS air evacuation system were essentially the same as those flown by commercial airlines using nonpressurized cabins. The 5,000 to 10,000 feet (1,524 to 3,048 meters) range prevailed on 79 per cent of the patient flights. In only 3.5 per cent of all patient flights was it necessary to fly above 10,000 feet. About 75 per cent of the symptoms occurred at cruising altitude, 15 per cent during ascent and 10 per cent during descent or on the ground.

The transport aircraft used afforded all therapeutic facilities available on a well equipped hospital ward. Routine medications, essential equipment and oxygen were available at all times. Special medical supplies and apparatus were carried when indicated. Adequate treatment during flight was therefore available at all times.

The types of in-flight therapy administered for symptoms which occurred during flight are shown in table 3. Rest in the recumbent position was the most frequently used therapeutic procedure for the relief of symptoms. In commercial transport aircraft with adjustable seats, sufficient recumbency can usually be achieved by lowering the back rest. Medication usually consisted of simple measures, such as the giving of acetylsalicylic acid (aspirin), motion sickness preventives, codeine, or phenobarbital, in single doses. Oxygen was administered to only 117 patients. To many of these it was given as a prophylactic measure. All these simple therapeutic measures are available in aircraft used by commercial airlines. However, when indicated, parenteral treatments of all types have been and can be easily administered during flight.

TABLE 3.—*Types of In-Flight Treatment Administered for Symptoms Occurring During Flight Among Patients Air Transported by MATS in 1949*

Treatment	Relative Frequency, Per Cent
None (no symptoms)	93.0
Rest in recumbent position	5.0
Medication	1.1
Oxygen	0.9
Total	100.0

TABLE 4.—*Results of In-Flight Treatment Administered for Symptoms Occurring During Flight Among Patients Air Transported by MATS in 1949*

Result of Treatment	Relative Frequency, Per Cent
None (no symptoms)	93.0
Improvement without treatment	0.7
Effective	4.6
Partially effective	1.5
Not effective	0.2
Total	100.0

Therapy during flight for relief of symptoms achieved a high degree of effectiveness, as shown in table 4. In the small per cent of cases in which symptoms did occur, simple measures brought relief 97 per cent of the time.

A complete statistical analysis of all the items on the thousands of reports for the hundreds of different clinical states represented by the data collected is beyond the scope of this paper. It is, however, instructive to review the experience with those cases which are relevant to the criteria previously given in this paper under "clinical conditions requiring special consideration." In table 5 the number of patients and the rate of incidence of symptoms are listed for various clinical conditions falling under the general headings of mental disease, heart disease, pneumothorax, asthma, internal hemorrhage, certain intrathoracic and intra-abdominal conditions, skull fracture or head injury and maxillofacial injuries.

TABLE 5.—*Incidence Rate of Symptoms Occurring During Flight in Certain Clinical Conditions Which May Be Expected to Be Affected By Air Transportation (Patients Requiring Special Consideration, According to MATS Criteria)*

Clinical Condition	Patients, Number	Relative Frequency of General Symptoms, Per Cent	Relative Frequency of Psychiatric Symptoms, Per Cent
Mental disease			
Psychosis	1,277	4.0*	8.0
Anxiety neurosis	200	5.0	3.0
Other neurosis	524	4.8	1.5
Heart disease			
Arteriosclerotic heart disease	60	5.0	...
Hypertension	140	10.0	...
Other heart disease	44	5.0	...
Pneumothorax	13	23.0*	...
Asthma	200	5.2	...
Internal hemorrhage			
Intracranial vascular lesions	31	6.4	...
Internal trunk injury	18	5.5	...
Intrathoracic and intra-abdominal wounds, operations and acute lesions			
Penetrating chest wound	4	0.0	...
Ruptured viscus	6	16.6	...
Gunshot wound in abdomen	5	20.0	...
Intestinal obstruction	22	13.6	...
Acute appendicitis	28	7.1	...
Acute diverticulitis	6	0.0	...
Skull fracture and head injuries			
Simple skull fracture	100	8.0	...
Fracture with bone depression	23	17.4	...
Cerebral concussion	58	10.3	...
Head injury	107	10.2	2.0
Fracture, zygoma or mandible	120	4.2	...

* At the 0.01 level of significance probability, this sample rate is inconsistent with the hypothesis that the true or long range value of the rate of general symptoms is 6.1 per 100 cases, the average rate for all 16,020 patients. All other general symptom rates in this table are consistent with this hypothesis.

TABLE 6.—*Incidence Rates of Symptoms Occurring During Flight in Additional Clinical Conditions Which May Require Special Consideration if Transported by Air*

Clinical Condition	No. of Cases	Relative Frequency of Symptoms, Per Cent
Pulmonary tuberculosis	745	9
Diseases of the lungs and pleura (nontuberculous)	220	11
Hodgkin's disease	89	15
Leukemia	54	17
Poliomyelitis	112	13
Peptic ulcer	482	4
Pregnancy	15	20
Diabetes	83	9

Taking 6.1 per cent as the average rate of incidence of general symptoms, we applied a conventional binomial statistical test of significance to each line of table 5. Deviations from the average incidence rate of general symptoms in table 5 do not exceed the 0.01 level of significance, except those for psychosis and pneumothorax.

Whittingham, Barbour and Macgown,[9] in discussing medical fitness for air travel, observe that there are 12 general categories involving about 30 clinical conditions which may contraindicate air travel. However, these authors point out that "certain cases which might be rejected for public air transport might be acceptable in an air ambulance or in a privately chartered aircraft where the patient's condition would cause no offence to fellow passengers and the altitude and length of each stage of the flight could be arranged to suit the patient." Table 5 includes the majority of conditions cited by those authors, and our experience in other categories listed in their compilation is shown in table 6.

Because the number of patients with some of the clinical conditions listed is small, no claims for high or low incidence rates can be made. The data are best considered as descriptions of experience rather than as discriminants among disease groups in regard to the differential effects of air transportation on these groups.

SUMMARY AND CONCLUSIONS

The development of air transportation of patients is briefly reviewed.

The methodology of this study is outlined and the gross findings obtained from 16,020 case reports on 14,000 patients are summarized.

Symptoms were reported in only 7 per cent of evacuation flights. Simple treatment during flight relieved symptoms 97 per cent of the time.

The incidence rate of symptoms is presented for certain clinical conditions which flying might be expected to affect. Symptoms were of a minor nature, and no untoward after-effects caused by air transportation were reported.

Findings presented herein support the opinion that almost every patient suitable for transportation by any means is suitable for transportation by air.

ABSTRACT OF DISCUSSION

DR. WALLACE H. GRAHAM, Washington, D. C.: It is well for the civilian physician and the population in general to know what the Air Forces have done in transporting the wounded. This transportation was the most stupendous task for American planes that has ever been undertaken. From 1943 to 1945, 546,000 patients were evacuated entirely by air, at a total cost of over $4,000,000, and with only five deaths for each 100,000 patients moved by air. The time required for evacuation formerly was 12 days, compared with an average of 2 days' travel time by air. Concerning the surgical aspects, considerable work has been done at Bethesda, Md. Thoracotomies were done, either lobectomies or pneumonectomies, on 192 patients, preoperative and postoperative status. The postoperative patients were transported by air as soon as it was felt that the suture lines would hold under the stress and strain. Some were gradually taken up to altitudes of 11,000 to 16,000 feet (3,353 to 4,877 meters) without effect on their status, and some were rapidly taken up to altitudes where dyspnea occurred. About 8,000 feet (2,400 meters) was found to be the maximum for patients with bronchiectasis. In the preoperative and postoperative patients dyspnea was noted to follow rapid diving. When decompression occurred, it had a stimulative effect. In the transporting of patients with bowel disturbances, intestinal obstructions and so forth, often it was necessary to have intubation under water to keep adequate drainage in the air and on the ground. With the help of the Wangensteen-Levin tube, an adequate pressure was maintained without any difficulty whatsoever to the patient.

DR. W. R. LOVELACE II, Albuquerque, M. Mex.: Of a total of over 16,000 patients, only about 7 per cent had any symptoms, and, because of good nursing care, 97 per cent of those were symptoms which were relieved by the proper type of treatment. It is encouraging to see the Armed Forces cooperating so that now (and since 1949) all their patients are transported by air, whether overseas or in this country. Colonel Strickland pointed out that practically all the patients could stand an altitude of 10,000 feet (3,048 meters) or below. In time of combat, altitudes in excess of 10,000 feet may be necessary on certain courses. The prevailing winds are not supposed to make a great deal of difference to night planes, particularly for flights across several thousand miles in length. The Air Force has on procurement some pressurized cabin aircraft that can be used for patients with special air disabilities, and I believe with such equipment the incidence of symptoms can be reduced to below 7 per cent. It should be realized that the types of aircraft discussed in this paper are comparatively slow. With papers of this kind as a basis, plans for extensive evacuations in the future can be carried out much better than if such studies had not been reported.

EFFECT OF PITUITARY ADRENOCORTICOTROPIC HORMONE (ACTH) IN ACUTE RHEUMATIC CARDITIS

May G. Wilson, M.D.
and
Helen N. Helper, M.D., New York

The beneficial effect of pituitary adrenocorticotropic hormone (ACTH) in rheumatic fever, first reported by Hench and associates [1] in 1949, has been confirmed by several investigators.[2] There has been general agreement that there is prompt subsidence of fever and arthritis. The effect in acute carditis has been difficult to evaluate. In most instances the patients selected for study had rheumatic fever with onset several weeks prior to therapy. In addition, treatment with the hormone was continued for four to six weeks in daily amounts of 20 to 50 mg.

We were fortunate to have 11 consecutive patients, 6 to 18 years of age, admitted to the New York Hospital [3] with acute rheumatic carditis of relatively short duration. In six patients it was presumably an initial episode, and in five it was a recurrent attack.

---

9. Whittingham, H.; Barbour, A. B., and Macgown, J. C.: Medical Fitness for Air Travel, Brit. M. J. **1**:603, 1949.

From the New York Hospital, Cornell University Medical Center, Department of Pediatrics.

This study was aided by grants from the Commonwealth Fund and the Helen Hay Whitney Foundation.

1. Hench, P. S.; Slocumb, C. H.; Barnes, A. R.; Smith, H. L.; Polley, H. F., and Kendall, E. C.: The Effects of the Adrenal Cortical Hormone 17-Hydroxy-11-Dehydrocorticosterone (Compound E) on the Acute Phase of Rheumatic Fever: Preliminary Report, Proc. Staff Meet. Mayo Clin. **24**:277, 1949.

2. Mote, J. R.: Proceedings of the First Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1950. Massell, B. F.; Warren, J. E.; Sturgis, G. P.; Hall, B., and Craige, E.: The Clinical Response of Rheumatic Fever and Acute Carditis to ACTH, New England J. Med. **242**:641 and 692, 1950. McEwen, C.; Bunim, J. J.; Baldwin, J. S.; Kuttner, A. G.; Appel, S. B., and Kaltman, A. J.: The Effect of Cortisone and ACTH on Rheumatic Fever, Bull. New York Acad. Med. **26**:212, 1950. Thorn, G. W.; Forsham, P. H.; Frawley, T. F.; Hill, S. R., Jr.; Roche, M.; Staehlin, D., and Wilson, D. L.: Medical Progress: The Clinical Usefulness of ACTH and Cortisone, New England J. Med. **242**:783, 824 and 865, 1950. Hench and others.[1]

3. Two patients were treated on the medical pavilion of the New York Hospital under joint supervision with Dr. David Barr.

Pituitary adrenocorticotropic hormone was given intramuscularly in a daily amount of 30 to 100 mg. every six to eight hours over a 24 hour period for four to seven days. Three patients received a second course of treatment for four to seven days. No other medicament was given, except to one patient who was near death.[4] The patients were kept on a simple diet limited to milk, eggs and cereal. In addition, 100 to 150 mg. of ascorbic acid was given daily. Fluid intake was limited to 900 to 1,500 cc. Daily observations included physical, fluoroscopic and electrocardiographic examinations. The weight, blood pressure and vital capacity determinations were made daily. Hematological and metabolic studies were made during the entire period of observation.

OBSERVATIONS

Metabolic studies were done on these patients as part of our experimental investigations and will be reported at a later date. There were no significant untoward symptoms, so-called side effects, attributable to pituitary adrenocorticotropic hormone during its administration to patients for four to seven days or during a second course of therapy. The blood electrolytes were not significantly altered. A transient rise in fasting blood sugar as well as a transient glycosuria was noted in all patients studied. There was a rise in steroid excretion. In a few patients, peaked elevated T waves were noted in serial electrocardiograms without associated hyperkalemia, and in one patient there was transient bradycardia and tachycardia, the former occurring during therapy and the latter following cessation of therapy.

In every patient evidence was obtained which indicated that the symptoms and signs of progressive acute carditis were terminated during pituitary adrenocorticotropic hormone therapy by the third to seventh day. In eight patients the symptoms and signs of active carditis did not recur when treatment was discontinued. The clinical evidence of termination of symptoms and signs of progressive carditis included decreasing enlargement of chambers of the heart concomitant with increase in cardiac reserve; disappearance of physical signs of valvular incompetence, electrocardiographic evidence of myocardial disturbance, and enlarged and tender liver. The patients were ambulatory two to four weeks from onset of therapy. At the present time these patients have been observed from four to 12 months since treatment. The cardiac status has remained as noted at the end of therapy.

There are summarized in the accompanying table pertinent data for 11 patients. It will be noted that the duration of symptoms, four to 28 days, before therapy includes the first day of illness because the exact day of onset of acute carditis was not certain. In the majority of patients the duration of acute carditis was within 10 days.

The dosage and duration of pituitary adrenocorticotropic hormone therapy was varied for experimental purposes. In one patient, J. A. (case 8), it was discontinued after the fourth day although the symptoms and signs of acute carditis had not completely disappeared. A second course of treatment was given after six days. In two patients, the daily amount which was given was not adequate and symptoms of active carditis reappeared for a few days following cessation of treatment. One of these patients, H. D. (case 11), received a second course of treatment; in the other, T. M. (case 3), symptoms and signs of active carditis disappeared in a few days without his receiving further therapy.

In all patients there was a disappearance of the associated symptoms such as fever, polyarthritis and erythema multiforme in 24 to 72 hours after the institution of therapy. In four patients there was a reappearance of symptoms three to eight days after treatment was discontinued. It is significant that there was no clinical evidence of recurrent carditis among these children. In two patients, J. P. and K. J. (cases 10 and 6), there was an elevation of temperature (100.4 to 102.2 F., 38 to 39 C.) for a few days. A third child, C. S. (case 5), had a swollen wrist for 24 hours. In A. C. (case 4) a few subcutaneous nodules were first observed on the third day and arthralgia occurred on the fifth day after discontinuation of treatment. This patient received a second course of the hormone for four days. The nodules remained until three weeks after therapy was discontinued.

In 10 patients the sedimentation rate remained elevated for one to five weeks after cessation of therapy. The cardiac reserve was normal, and there was no clinical evidence of rheumatic fever. In one child the sedimentation rate returned to normal by the third day after discontinuation of therapy.

The normal range of circulating eosinophils in children is 100 to 400 per cubic millimeter.[5] The level of circulating eosinophils before treatment, in our patients, ranged from 0 to 68. The circulating eosinophils rebounded and remained within normal range after discontinuation of therapy in patients who had no recurrence of symptoms, although the sedimentation rates remained elevated. Patients experiencing a recurrence were found to have a drop in the circulating eosinophil count antedating the occurrence of fever or arthritis.

The circulating eosinophils are considered the most sensitive index of cortical hormone secretion. They provided a useful guide to the adequacy of therapy. A failure to drop to zero levels or a rise during treatment is probably indicative of inadequate dosage (H. D., case 11). A fall in circulating eosinophils below normal range after discontinuation of therapy may indicate the necessity for readministration of pituitary adrenocorticotropic hormone (A. C., case 4).

During therapy the circulating eosinophils should probably be maintained at zero levels. The following tentative schedule of therapy in acute carditis is based on the trial and error method used in this study. An initial daily amount of 80 to 100 mg. of pituitary adrenocorticotropic hormone every six hours for the

4. One patient, H. W., near death and cyanotic, with a respiratory rate of 50 to 70 per minute and pulmonary complications, was given oxygen, penicillin and digitalis during pituitary adrenocorticotropic hormone therapy. Blood electrolytes were normal during treatment. There was no clinical evidence of peripheral congestive failure. Diuretics, given to the patient after discontinuation of hormone therapy resulted in a decided diuresis and return of normal respiratory rate in a few days.

5. Hain, K.: The Circulating Eosinophils in Children in Health and Disease, Pediatrics, to be published.

first three days and 40 to 60 mg. daily for the remaining four days would appear to be adequate. The following graphic protocols and case records illustrate in more detail the clinical course of the patients receiving the hormone.

REPORT OF CASES

CASE 1.—R. F., a boy aged 8½ years, weighing 28 Kg., was admitted to the hospital during what was presumably his first attack of rheumatic fever. Twelve days before admission and there was a systolic murmur transmitted over the precordium. Fluoroscopy revealed enlargement of the chambers of the heart. An electrocardiogram showed prolongation of the P-R interval. The vital capacity was diminished. There was progressive involvement of the joints during the 48-hour control period. During the same period the temperature rose to 102.2 F.

Pituitary adrenocorticotropic hormone was given in daily doses of 100 mg. for the first 24 hours, 75 mg. per day for the next two days and 30 mg. per day for the remaining period (fig. 1). The temperature dropped to normal within 24 hours,

Effects of Pituitary Adrenocorticotropic Hormone (ACTH) in Acute Carditis

Case	Age, Yr.	Weight Kg.	Duration of Illness Days *	ACTH Mg.	Duration of Therapy Days	Previous Cardiac Diagnosis †	Severity of Carditis Before ACTH: Degree ‡	Severity of Carditis Before ACTH: EH †	Termination of Acute Carditis: Days	Termination of Acute Carditis: Ambulatory in Wks.	Cardiac Diagnosis † Last Observation	Interval Since Therapy Mo.	Remarks
Initial Attack													
1 R. F.	8½	28.0	12	370	7	.....	2+	2+	6	3	Pos. & pot., EH —	8	No clinical evidence of residual cardiac damage
2 M. L.	6½	19.0	4	180	4	Sys. mur., EH ?	3+	3+	4	3	EH 2+ §	8	Known to have precordial sys. mur. for several years; cardiac enlargement may have been present before this illness
3 T. M.	9	36.5	21	535	7	.....	3+	3+	5	3	Pos. & pot., EH ±	5	Duration of illness before treatment and inadequate therapy may be responsible for minimal residual cardiac damage and recurrence of symptoms
4 A. C.	7	22.8	21 4	465 250	7 4	.....	3+ —	2+ —	5	2	Pos. & pot., EH —	5	No clinical evidence of residual cardiac damage; recurrence of arthralgia and appearance of subcutaneous nodules 5 days after treatment ended. The nodules did not disappear during second course of ACTH, given for 4 days
5 C. S.	6½	23.0	28	480	7	.....	3+	2+	6	3	Pos. & pot., EH ±	4	Equivocal clinical evidence of residual cardiac damage; evanescent arthralgia of wrist on 8th day after treatment was discontinued
6 K. J.	10	28.0	10	472.5	7	Sys. mur., EH ?	2+	2+	5	2	Pos. & pot., EH ±	4	Known to have sys. mur. for several years; equivocal clinical evidence of cardiac enlargement, which may have been present before this illness
Recurrent Attack													
7 J. H.	8½	23.0	3	320	7	MI, EH 2+	3+	3+	2	2	MI, EH 2+	7	No clinical evidence of increased cardiac damage
8 J. A.	9	45.0	12 6	200 550	4 7	MI, EH 2+	4+ 2+	3+ 3±	4 9	3	MI, EH 2+	12	No clinical evidence of increased cardiac damage; ACTH discontinued after 4 days to determine whether course of active carditis was interrupted; second course of therapy given
9 H. W.	14	63.0	21	400	7	MI, EH 2+	4+	3+	9	4	MI, EH 2+	6	No clinical evidence of increased cardiac damage: patient, near death and cyanotic, did not manifest peripheral signs of cardiac failure during treatment; physical signs of pulm. involvement may have been due to cardiac failure or a pneumonic process
10 J. P.	9¾	28.3	21	340	7	MIS, AI, EH ?	3+	3+	7	3	MIS, AI, EH 2+	6	Previous cardiac findings unknown; probably no further cardiac damage during this illness
11 H. D.	18	73.6	4 2	450 510	7 7	MIS, EH 2+	3+ 1+	3+ 3±	3 2	3	MIS, EH 2+	5	No clinical evidence of increased cardiac damage; recurrence 48 hr. after end of therapy and prompt termination on 2d day of second course of treatment suggest inadequate initial treatment

* Duration of illness includes the first day of illness; the day of onset of acute rheumatic fever or active carditis is not certain.
† The initials EH denote enlargement of the heart; the — symbol indicates no enlargement of chambers, ± equivocal enlargement, + minimal enlargement, 2+ moderate enlargement and 3+ marked enlargement. The initials MI denote mitral insufficiency, MIS mitral stenosis and AI aortic insufficiency. Pos. indicates possible heart disease and pot., potential heart disease.
‡ The degree of severity of carditis is: 1+, mild; 2+, moderate; 3+, marked and 4+, extreme.
§ Record of previous cardiac diagnosis on extent of cardiac enlargement not available.

the patient had had a sore throat with swelling in the right mandibular region and a temperature of 104 F. He was given penicillin and sulfadiazine. The temperature remained elevated (between 100 and 101 F.). Four days before admission the child complained of pain in the inner aspect of the right thigh. On examination of the heart, sounds were poor in quality and a systolic murmur was heard. Three days before admission he had pain and swelling of the right big toe, right ankle and left knee as well as both elbows. On admission his temperature was 100.4 F., pulse rate 98 and respiratory rate 25. The patient was acutely and severely ill. There was no enlargement of the heart on percussion. There was a visible cardiac thrust. The heart beat was rapid; it was overactive, and the patient was more comfortable. By the third day the heart had diminished in size and the sounds were of better quality. The systolic murmur was heard best at the base. Fluoroscopy revealed equivocal chamber enlargement by the sixth day. The vital capacity rose progressively, reaching normal by the sixth day. The patient was discharged after 21 hospital days, apparently well. Follow-up examination after eight months revealed the heart to be normal on auscultation and fluoroscopy.

The circulating eosinophil count ranged from 15 per cubic millimeter before treatment to a range of 0 to 4 for seven days of treatment, rebounding and remaining elevated after discontinuation of therapy.

The only unusual effect of pituitary adrenocorticotropic hormone in this case was a bradycardia on the third day of treatment and tachycardia for a few days after discontinuation of therapy.

CASE 4.—A. C. a girl aged 7 years, weighing 22.8 Kg., was admitted with what was presumably a first attack of rheumatic fever. Three weeks before admission she had had fever, sore throat and abdominal pain. The patient was given aspirin (acetylsalicylic acid) and appeared well until two days before admission, when she again had abdominal pain, fever and joint pains localized to the right hip, both knees and toes. The child was acutely ill on admission with a temperature of 104 F. (40 C.), pulse rate 130 and respiratory rate 24. There was moderate swelling and severe pain and heat over both ankles and knees. The heart action was rapid; a loud, harsh systolic murmur was heard over the entire precordium, transmitted to the left axilla. Fluoroscopy showed moderate enlargement of all chambers of the heart. There was tenderness over the liver, which was palpated 2 cm. below the right costal margin. The vital capacity was decidedly diminished.

Pituitary adrenocorticotropic hormone was given intramuscularly in a dosage of 25 mg. every eight hours, a total of 75 mg. daily for three successive days, and 60 mg. daily for the next four days (fig. 2). On the fifth day of treatment the systolic murmur was barely audible. The liver was not tender or palpable. On fluoroscopic examination the heart was within normal limits. Three days after cessation of therapy a few subcutaneous nodules were noted, and by the fifth day the temperature rose and the child had recurrent arthritis in one knee. There was no clinical evidence of recurrent carditis. She was given a second course of treatment for four days at six hour intervals, 80 mg. daily for two days and 50 mg. per day for the succeeding two days. The fever and arthralgia disappeared within two days, but the nodules persisted for three weeks. The patient was ambulatory three weeks after the start of therapy.

The circulating eosinophil level was zero prior to therapy and during the first course of treatment rose from zero levels to a range between 3 and 26 on the last two days of treatment. After cessation of treatment the eosinophils rose to a range of 220 to 245 but fell to 54 per cubic millimeter, presaging the recurrent fever and arthritis. After the second course of treatment the circulating eosinophils remained within normal range.

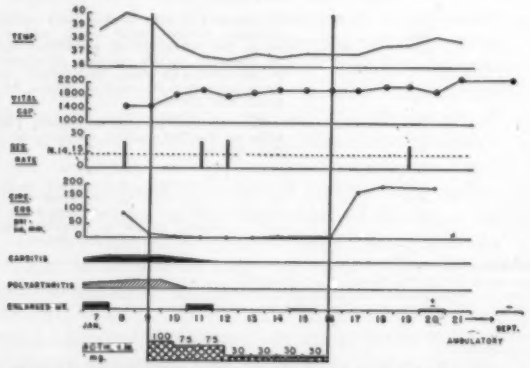


Fig. 1 (case 1).—Clinical response of R.F., a boy aged 8½ years, to pituitary adrenocorticotropic hormone (ACTH) therapy. On the line marked "Enlarged Ht." the ± and — signs denote equivocal and no enlargement of the chambers, respectively.

At the last examination, four months after therapy was discontinued, the patient had a short systolic murmur at the second and third interspaces. On fluoroscopy the heart was within normal limits.

It is of interest that subcutaneous nodules were noted in this patient's fourth week of illness, which is about the time nodules are usually observed in the course of rheumatic fever. Their persistence during therapy suggests that the proliferative phase of the disease is not responsive to pituitary adrenocorticotropic hormone.

CASE 7.—J. H., a boy aged 8½ years, weighing 23 Kg., was admitted for the third time to the New York Hospital with a recurrent attack of acute rheumatic carditis. The last

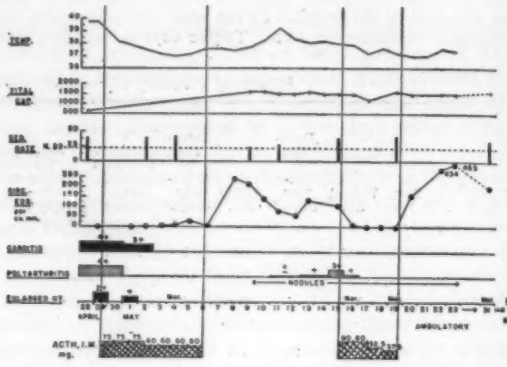


Fig. 2 (case 4).—Clinical response of A.C., a girl aged 7 years. Carditis and polyarthritis are graded 4+ and 3+, extreme and marked; polyarthritis grades ± and + indicate equivocal and minimal symptoms; enlargement of the heart is graded 2+, moderate, and +, minimal.

attack, which was exceedingly severe, occurred one and one half years previously, requiring six months' hospitalization. The child had been followed regularly in the Cardiac Clinic. Three days before admission he had fever (102 F.) and complained of pain in the left hip and knees for 12 hours. On the day of admission his temperature was 100.4 F. and his pulse rate 120; his vital capacity had dropped from that of his last clinic visit one week previously. The heart rate was rapid. There was a systolic murmur transmitted over the entire precordium and a new localized diastolic murmur. Fluoroscopic examination showed pronounced enlargement of both the left ventricle and the left auricle beyond that noted one week previously in the Cardiac Clinic. There was swelling and tenderness of the left hip.

Pituitary adrenocorticotropic hormone was given intramuscularly every eight hours in a daily dosage of 75 mg. for the first two days, 50 mg. on the third day and 30 mg. for the remaining four days (fig. 3). By the second day his heart had diminished in size and the diastolic murmur was no longer heard, and by the seventh day the heart had returned to the size noted before this attack. The vital capacity returned to normal, as did the electrocardiographic tracing, which had shown a prolonged P-R interval. Within 24 hours there was a drop in temperature, and within 48 hours the patient was symptom free.

The circulating eosinophils, which were 201 per cubic millimeter 24 hours before treatment, dropped to 59 per cubic millimeter immediately before therapy and then to zero for the entire period of treatment. After cessation of therapy the circulating eosinophils ranged between 120 and 200, remaining within this normal range.

This patient has been ambulatory, after two weeks' hospitalization, for the past seven months. His cardiac status has remained as noted on the sixth day of therapy. The prompt response to therapy emphasizes the importance of early treatment.

CASE 8.—J. A., a boy aged 9 years, weighing 45 Kg., was admitted to the hospital with a recurrent attack of acute rheumatic carditis. The child had been under observation in the Cardiac Clinic for the past two years. Twelve days prior to admission he complained of fatigability. Three days prior to admission there was fever (between 102 and 104 F.). On the day of admission the child complained of pain in the left

ankle. There was a dark red coppery eruption over the abdomen and back. He was acutely ill; respirations were 38 to 40 per minute, vital capacity was diminished and the heart rate was rapid. In addition to the systolic murmur that he had had previously and that was heard over the entire precordium, there was a diastolic murmur audible over the fifth interspace. An electrocardiogram showed an incomplete heart block with Wenckebach periods. Fluoroscopy revealed increased enlargement of the chambers of the heart above that present before this illness. The boy was observed for four days before pituitary adrenocorticotropic hormone was given. During this time the clinical course was characterized by fever (ranging between 101.66 and 104 F., 38.7 and 40 C.), a rapidly falling vital capacity and increase in the severity and distribution of the eruption. He was acutely ill and dyspneic and had abdominal pain.

The hormone was given intramuscularly every six hours in daily doses of 25 to 50 mg. for four days (fig. 4). Within 24 hours the patient was decidedly improved. The temperature receded and the erythema disappeared. By the third day his vital capacity had increased and the electrocardiographic tracing became normal. By the fourth day fluoroscopic examination showed slightly diminished enlargement of the left ventricle and left auricle and disappearance of the diastolic murmur. The hormone dosage was discontinued for experimental purposes. Within 24 hours the erythema multiforme reappeared and the temperature rose. The vital capacity remained at the same level until the fifth day after discontinuation of therapy. Treatment with the hormone was reinstituted on the seventh day, and it was administered every eight hours in daily doses of 75 mg. for seven days. The temperature again receded. The vital capacity slowly rose to normal levels. Fluoroscopic examination showed that the heart size had returned to that which had been noted previous to this episode. The systolic murmur was localized, and the diastolic murmur did not reappear. The patient has maintained his improved cardiac status for 12 months.

Before treatment the circulating eosinophil count ranged from 10 to 31 per cubic millimeter. During the first course of treatment it ranged above this level, not reaching zero. After the first course of treatment the range was from 57 to 169 per cubic millimeter. During the second course the eosinophil count ranged from 1 to 12, rebounding after 72 hours and remaining at levels between 170 and 221 per cubic millimeter after discontinuation of therapy.

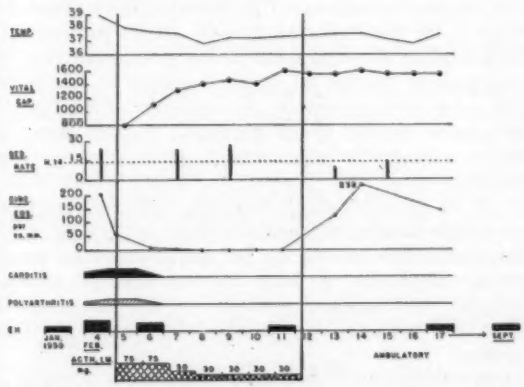


Fig. 3 (case 7).—Clinical response of J.H., a boy aged 8½ years.

In this patient there was evidence that the acute rheumatic process had been interrupted during the first four days of pituitary adrenocorticotropic hormone therapy. A comparison of the level of the circulating eosinophils during the first and second course of treatment indicates that the amount of hormone given during the first course was not adequate. In comparison of the vital capacity measurement during and after the first course of therapy, it will be noted that the rise during treatment was maintained for seven days between the two courses. During the second course, at a higher dosage of the hormone, there was a much slower rise in vital capacity, which did not reach normal limits until 48 hours after cessation of therapy.

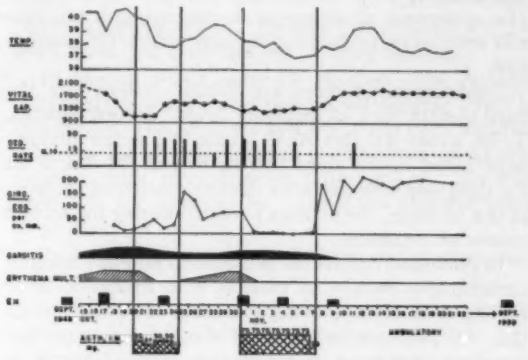


Fig. 4 (case 8).—Clinical response of J.A., a boy aged 9 years. The initials EH in column at left indicate enlarged heart.

This observation indicates that treatment at the onset of acute carditis should result in an earlier termination of the acute rheumatic process.

COMMENT

The course of acute rheumatic carditis in any one child is unpredictable as to both severity and duration. In our experience over many years, residual cardiac enlargement has always been demonstrable although regression of systolic and diastolic murmurs has occurred frequently.

A review was made of the records of 12 consecutive patients with acute rheumatic carditis who were observed at the New York Hospital prior to the availability of pituitary adrenocorticotropic hormone. There was one death. There was residual cardiac enlargement in all patients experiencing an initial attack and further cardiac enlargement in patients with recurrent attacks. In no instance were the symptoms and signs of active carditis diminished or the normal cardiac reserve restored in a period of four to nine days. The course of active rheumatic carditis was progressive, and the duration of acute illness ranged from three weeks to eight months. In six of the patients use of oxygen, digitalis and meralluride injection (mercuhydrin® sodium solution) was required. All the patients received salicylates, three to the point of toxicity.

In the 11 patients who received pituitary adrenocorticotropic hormone some degree of cardiac damage was probably sustained, particularly in those patients receiving inadequate treatment or in those in whom the duration of active carditis before treatment was more than several days. The diminished enlargement of the chambers of the heart, the disappearance of murmurs of valvular incompetency, electrocardiographic evidence of myocardial disturbance and the increase in cardiac reserve in a period of two days to one week during hormone therapy was interpreted as indicative of a reversibility of the acute rheumatic process.

The degree of residual valvular damage is difficult to evaluate. It is, however, reasonable to consider that valvulitis, like myocarditis, was terminated. The recurrence of associated manifestations of rheumatic fever without progressive symptoms of acute carditis might indicate a possible selective effect on the acute inflammatory process involving the cardiac structures. The recurrence of arthralgia in patients with rheumatoid arthritis on cessation of therapy favors this assumption.

Subcutaneous nodules are usually observed in the third to sixth week of rheumatic fever.[6] In two patients, T. M. (case 3) and A. C. (case 4), a few nodules were noted in the third to fourth week of illness on the third and fifth day after discontinuation of therapy; in one of these, the nodules persisted during the second course of treatment.

In published reports the response to pituitary adrenocorticotropic therapy in patients with rheumatic fever of long duration has not been striking. It would appear that the proliferative phase of the rheumatic process is not as responsive to stimulation of the adrenals as the acute inflammatory phase. In J. A. (case 8) the response to a second course of treatment was slower than that to the first course, although the dosage had been increased.

The duration of any one attack of rheumatic fever is self limited. The nature of the fundamental chemical changes responsible for the termination of the acute rheumatic process in the natural course of the disease as well as after stimulation of the adrenal by pituitary adrenocorticotropic hormone remains obscure.

In rheumatic fever the degree of cardiac damage parallels the severity and duration of acute carditis.[6] It has been shown that, during hormone therapy, in these 11 patients progressive symptoms and signs of acute carditis were terminated in a period of days. The patients were ambulatory in two to four weeks. Four to 12 months after treatment there was no further evidence of increased cardiac damage in five patients; in six patients who were treated during what was presumed to be their first attack, there was no evidence of cardiac damage in two and equivocal evidence in three.

Further confirmation of these observations in a large series is necessary. From this limited experience it would appear that the early treatment of acute carditis with adequate amounts of pituitary adrenocorticotropic hormone should shorten the course, result in minimal residual cardiac damage and prevent death due to progressive carditis and resultant congestive failure.

SUMMARY AND CONCLUSION

1. Eleven consecutive patients who were admitted to the New York Hospital with acute rheumatic carditis were given 30 to 100 mg. of pituitary adrenocorticotropic hormone (ACTH) every six to eight hours for periods of four to seven days. Three patients received a second course.

2. There were no significant untoward effects attributable to therapy.

3. The circulating eosinophil count provides a useful guide to the adequacy of therapy.

4. The following tentative schedule of hormone therapy, guided by the level of circulating eosinophils, is recommended: an initial daily amount of 80 to 100 mg., intramuscularly, every six hours for the first three days and 40 to 60 mg. for the remaining four days.

5. In every patient clinical evidence was obtained of termination of symptoms and signs of progressive acute carditis during therapy.

6. Patients were ambulatory two to four weeks from the onset of therapy.

7. Four to 12 months after treatment of the six patients with what was presumably an initial attack, there was no evidence of residual cardiac damage in two and equivocal evidence in three; in five patients experiencing a recurrent attack there was no clinical evidence of increased cardiac damage.

From this limited experience it would appear that the early treatment of acute carditis with adequate amounts of pituitary adrenocorticotropic hormone should shorten the course of the disease, result in minimal residual cardiac damage and prevent death due to progressive carditis and resultant congestive failure.

6. Wilson, M. G.: Rheumatic Fever: Studies of the Epidemiology, Manifestations, Diagnosis, and Treatment of the Disease During the First Three Decades, New York, Commonwealth Fund, 1940.

SPASTIC SPINAL PARALYSIS RESPONDING TO POTASSIUM THERAPY

REPORT OF A CASE

Eric Barrett, M.D., Beverly Hills, Calif.

There have been many reported cases of muscular weakness and flaccid paralysis that have responded promptly to treatment with potassium—in particular, cases of familial periodic paralysis and individual cases with similar symptoms. This, however, to my knowledge, is the first reported case of spastic paralysis of long duration that responded promptly and dramatically to potassium therapy on repeated courses of treatment and relapsed as promptly on cessation of treatment. The term "spastic spinal paralysis" is used here to denote a syndrome rather than a specific disease. The significance of this preliminary report would seem to lie in its implications regarding the great number of similar conditions in which there is pressing need for clarification of etiology and improvement of treatment. Examples of these are the so-called system diseases, the funicular myeloses, or the disseminated or diffuse demyelinating diseases of the central nervous system.

REPORT OF CASE

R. S., a white married woman aged 29, was the mother of two children, 1 and 4 years old respectively. One of her two sisters and two remote relatives were said to have epilepsy. She had had the usual inconsequential diseases of childhood but no other febrile diseases. Her illness had started about 11 years ago with clumsiness in the knees and stiffness of gait. Later she complained also of weakness in the shoulders and the arms and of light swellings, redness and pains in the metacarpophalangeal joints, with slight atrophy of the inter-

Drs. Samuel Pevsner and Otto Neurath were supervising physicians in the case. Dr. Otto Neurath prepared the electrocardiograms, and Drs. Richard J. Henry and Sam Berkman of the Bio-Science Laboratories made the blood studies.

osseal muscles. She also had occasional pains in different and changing locations, such as in the neck, the arms and the legs. However, she claimed that these were not "real pains"; they were apparently dysesthesias of an unpleasant character and were said to be not in the joints but in "muscles" or "bones." There was never any roentgenologic evidence of arthropathy. The pains were not connected with the stiffness, as they appeared in different places, and the stiffness persisted during painless periods. There were also remissions of the stiffness, during which her gait was normal. Occasionally the patient noticed visible fibrillations in the muscles of the arms and the legs. During each of her two pregnancies, there was a remission, followed each time by a severe relapse. She did not recover from the last relapse, about one year ago, but became gradually worse. About 10 months ago she had difficulty in swallowing and speaking for a few days and also had an attack of blurred vision. For a few days she felt that her eyes were "jumping." She also suffered from chronic constipation.

Symptomatic treatment, directed particularly to possible rheumatic arthritis, had no significant results. Each of several medical examinations revealed hyperactive deep reflexes but yielded no certain diagnosis, except for one neurological examination, which disclosed absence of abdominal reflexes and spastic paralysis of the legs diagnosed tentatively as manifestations of multiple sclerosis.

When I first saw the patient, in June 1950, she was able to walk unaided only with great difficulty. She had a characteristic shuffling, spastic gait, with great difficulty in lifting her feet from the floor. On examination this gait proved to be pseudoparetic with hyperactive deep reflexes, but without true muscular weakness; the right leg was in considerably worse condition than the left. The Babinski and other pathological reflexes were absent. The abdominal reflexes were missing. There was slight atrophy of the small muscles of the hands and inability to close the fists. The patient was wet with perspiration, apparently an effect of large doses (up to 9 Gm. a day) of acetylsalicylic acid (aspirin), which she had the habit of taking because of the occasional dysesthesias. On subsequent examinations there was an occasional lateral, small amplitude nystagmus of the right eye. The Romberg sign was slightly positive, but there were no other signs of ataxia. There was no intention tremor. Sensibility was intact. The eyegrounds were normal. The speech was rapid, neither scanning nor dysarthric. The patient's mental outlook was almost despondent. The hyperreflexia was proportional to the spasticity. Passive movements were free with regard to a possible arthropathy. There was no cogwheel effect, but there was an initial "clasp knife" type of resistance to sudden passive movement.

Diagnosis.—Whether or not the pathological condition of the patient's hands was due to rheumatic disease, it seems clear that the spasticity of her legs and of her body was not due to pains or a possible rheumatic involvement. Many features of her history, as well as many observations at examination, might be interpreted as characteristic of multiple sclerosis or amyotrophic lateral sclerosis. However, multiple sclerosis of such long duration probably would have produced many symptoms that were missing in this patient, while amyotrophic lateral sclerosis is a disease of the older age group and has a rapid progressive course (lasting a few years, at the most about eight); moreover, the atrophy of her interosseal muscles was rather slight.

Spastic spinal paralysis is merely a syndrome and is present in a large number of diseases of the central nervous system affecting the extrapyramidal pathways in the spinal cord. The most plausible diagnosis in this particular case seems to be the variation of lateral sclerosis that was first reported by Seeligmüller (1876) and later by Strümpell (1880). It is described [1] as a frequently hereditary form, beginning at the age of 20 to 30 or younger and taking a very slowly progressive course, lasting up to a few decades. Its principal—sometimes only—symptoms are spastic, pseudoparalytic gait, for a long time without muscular weakness, and hypertonicity and hyperactivity of the deep reflexes. As in amyotrophic lateral sclerosis, the Babinski reflex may be present or absent. The pathological lesions in such cases are found to be degenerations in the lateral and anterolateral funiculi of the spinal cord, affecting particularly the extrapyramidal tract, extending upward through the medullary pyramids, pons and crus into the internal capsule.

Treatment and Course of Progress.—In previous treatments ephedrine had had an unfavorable effect in this patient. The relatively best effect had been obtained with the use of neostigmine; a still better effect was obtained with physostigmine salicylate—at least with regard to her constipation. For pains she had taken large doses of aspirin.

Potassium treatment was introduced for three reasons:

1. Potassium seems to be synergistic with neostigmine (as has been found in myasthenia gravis).

2. The constant perspiration due to the action of aspirin may have caused a dehydration and thus a loss of potassium. Since there was no oliguria or renal or adrenal deficiency there seemed to be no contraindication against this medication.

3. The third reason was a theoretical one, as will be discussed more fully later. Briefly, chronic potassium deficiency produces, among other lesions, cardiac changes [2]: degenerations, fibrous proliferation, scar formation and lymphatic infiltrations. Since many aspects of the action of potassium are similar in muscle and in nervous tissue, it is conceivable that changes similar to those in muscle tissue may occur in the central nervous system owing to potassium deficiency.

For two weeks 3 Gm. of potassium nitrate a day was given, in three doses (1 Gm. in enteric-coated tablets). The patient was given a low sodium chloride and low carbohydrate diet. An improvement started on the second day and increased gradually, so that, after two weeks, her gait was almost normal. The treatment was discontinued for one week, and almost immediately her symptoms recurred. A second course of treatment, this time with 3 Gm. of potassium chloride a day in enteric-coated tablets and with the same diet, was instituted, and again there was an immediate response. Three weeks of this treatment eliminated all spasticity; the deep reflexes were normal on both sides. For the second time the treatment was discontinued for one week. During this week the symptoms of spasticity recurred and increased gradually, in spite of the administration of placebos in the form of inert, enteric-coated tablets of the same appearance as the potassium chloride tablets. At the end of this week a 16 mm. motion picture was taken to demonstrate the spastic gait and the increased patellar reflexes, particularly on the right side. Immediately after this, a third course of treatment was started, this time with 6 Gm. of potassium chloride a day. The response was prompt and dramatic. Three days later another 16 mm. motion picture was taken, which demonstrates the patient's ability to run and jump and the fact that the patellar reflexes had returned to normal.

1. Seyfarth, C.: Strümpell-Seyfarth Lehrbuch der speziellen Pathologie und Therapie der inneren Krankheiten für Studierende und Ärzte, eds. 31 and 32, Leipzig, F. C. W. Vogel, 1934, vol. 2, p. 610. Bing, R.: Lehrbuch der Nervenkrankheiten in 30 Vorlesungen, ed. 5, Berlin, Urban & Schwarzenberg, 1937, p. 139.

2. Schrader, G. A.; Prickett, C. O., and Salmon, W. D.: Symptomatology and Pathology of Potassium and Magnesium Deficiencies in the Rat, J. Nutrition **14**: 85 (July) 1937. Darrow, D. C., and Miller, H. C.: The Production of Cardiac Lesions by Repeated Injections of Desoxycorticosterone Acetate, J. Clin. Investigation **21**: 601 (Sept.) 1942.

A few days later another experiment was begun. Krebs and Eggleston [3] had proved in test tube experiments that L-glutamic acid prevents the loss of potassium from nervous tissue into the medium. It remained to be seen, however, whether this effect could be achieved clinically. The patient, therefore, was given 10 Gm. of L-glutamic acid a day in gelatin capsules to replace the potassium chloride. Observations so far would indicate that, while without treatment her symptoms had regularly recurred, L-glutamic acid retarded this recurrence to some extent. After about five days, however, her paralysis and pains returned. A fourth course of treatment with potassium chloride and the same diet as before was initiated three days later. This time the dose was 10 Gm. of potassium chloride a day. The response was even more impressive and even more gratifying, physically as well as psychically, to the patient. It seems that in a state of severe potassium deficiency a dose of 3 Gm. of potassium chloride a day was sufficient to produce conspicuous results with regard to the motor phenomena. Complete relief of pain was obtained only with a larger dose. In respect to both pain and paralysis a dose of 10 Gm. a day yielded the best effects.

COMMENT

The existence of potassium deficiency in specific tissues can be deduced clinically, without biopsy, from one of two observations: (1) retention of administered potassium, without increased excretion, and (2) prompt clinical response to potassium administration. In our case the clinical response to administration of potassium seemed to indicate clearly a potassium deficiency in the central nervous system.

The unreliability of determinations of potassium in the blood in the assessment of potassium deficiency is demonstrated in the accompanying table, based on

Levels of Potassium in the Blood *

Interval	Serum	Whole Blood	Intracellular (Erythrocyte)
At the end of second course of potassium chloride	15.8	133.4	296
One week after discontinuance of potassium chloride	15.8	207.0	477

* Milligrams per 100 cc. A level of 15 to 22 mg. per 100 cc. is considered to be normal.

observations in the case reported here. During the week without potassium chloride therapy, between the two courses of treatment, the patient had a gradual relapse, while the intracellular potassium level increased.

Cation exchanges through the cell membranes seem to be related to metabolic activities and the expenditure of energy, rather than to merely passive transfers resulting from differential impermeabilities or the size of the ions alone. A specific potassium deficiency may thus be explained on the basis of metabolic disturbances. The potassium ion, in particular, plays a part in oxidative processes as well as in carbohydrate metabolism.

If degenerations of the central nervous system can be related to disturbances of electrolyte metabolism, this may, in turn, point to disturbances of the endocrine controlling factors of electrolyte metabolism, especially to anterior pituitary and adrenocortical deficiencies.

The observations in this case raise a question whether this instance of spastic spinal paralysis due to potassium deficiency is a pathological condition *sui generis* or whether such electrolyte imbalance plays a role in other cases with similar symptoms. Further clinical and experimental studies on the basis of observations that have been made in this case are being pursued. They will be reported on completion.

2881 Coldwater Canyon Drive.

VAGOTOMY FOR IDIOPATHIC ULCERATIVE COLITIS AND REGIONAL ENTERITIS

RESULTS IN TWENTY-ONE CASES

Philip Thorek, M.D., Chicago

In November 1948 I reported the results of vagotomy in eight cases of idiopathic ulcerative colitis; this series represented a study [1] which was begun in 1946. To date I have performed vagotomies in 20 cases of idiopathic ulcerative colitis, 7 of which were associated with regional enteritis. One additional patient had a vagotomy performed for a fulminating mucous colitis, thus making a series totaling 21 cases. The results have been encouraging, and at present the series is being enlarged and studied further.

In 1948, Dennis and associates [2] described their results in 28 cases of idiopathic ulcerative colitis in which vagotomy had been performed. They concluded that the condition responded favorably in most cases following division of the vagus nerves. Since their last published report 14 additional cases have been added to their series, making a total of 42 cases.[3]

One naturally assumes that before any form of surgical intervention is contemplated for this condition proper medical and psychiatric therapy have been given a thorough trial. Portis [4] has stressed this point. Buie [5] has emphasized how unfortunate it is that we all cannot look through the same proctoscope at the same time. In this way we would have a more uniform concept of the condition.

DOES THE VAGUS SUPPLY THE ENTIRE COLON?

It is agreed usually that the colon is supplied by four sets of nerves, the vagus, the sacropelvic, the sympathetic and Auerbach's plexus. Most standard anatomy books agree that the vagus nerve supplies the colon as far as the left colonic flexure; however, in the light of present knowledge some doubt may be cast on this teaching. Although it has been accepted that the colon is supplied by sacropelvic nerves distal to the splenic flexure, this would not explain the observations reported

From the Department of Surgery, University of Illinois, Cook County Graduate School of Medicine, Cook County, American and Alexian Brothers' Hospitals.

Read before the Section on Gastro-Enterology and Proctology at the Ninety-Ninth Annual Session of the American Medical Association, San Francisco, June 29, 1950.

3. Krebs, H. A., and Eggleston, L. V.: An Effect of L-Glutamate on the Loss of Potassium Ions by Brain Slices Suspended in a Saline Medium, Biochem. J. 44: vii, 1949.

1. Thorek, P.: Vagotomy for Chronic, Nonspecific, Ulcerative Colitis, J. Internat. Coll. Surgeons 11: 578-581, 1948.

2. Dennis, C.; Eddy, F. D.; Frykman, H. M.; McCarthy, A. M., and Westover, D.: The Response to Vagotomy in Idiopathic Ulcerative Colitis and Regional Enteritis, Ann. Surg. 128: 479-496, 1946.

3. Dennis, C.: Personal communication to the author.

4. Portis, S. A.: Idiopathic Ulcerative Colitis: Newer Concepts Concerning Its Cause and Management, J. A. M. A. 139: 208-214 (Jan. 22) 1949.

5. Buie, L. A.: Personal communication to the author.

by Dennis and others.[2] They state: "It is difficult to ignore the possibility that vagal innervation extends as far as the anus; at least the results appear as if this were the case. Much of the benefit may then accrue from protection of the mucosa from the reflex effects of the violent emotional stress to which these patients are so subject."

Grace, Wolf and Wolff [6] recently stressed the important relationship which exists between periods of emotional stress and the onset or exacerbation of symptoms in patients with chronic ulcerative colitis. Wolf and Andrus [7] described in man the swelling and engorgement of the gastric mucosa which results from severe emotional response such as anger. They reported that this reaction was lost following division of the vagi. Holman [8] found the same responses in the terminal portion of the ileum and the cecum. Dennis and co-workers [2] concluded that similar responses might be found in the rectums of patients with ulcerative colitis. They reported two interesting cases which seemed to bear out this contention. With the patient in the Sims position, the rectal mucosa was observed through the proctoscope while the patient was being questioned on those subjects which might produce a decided emotional response. When a subject was discussed which would produce such emotional upsets, petechial hemorrhages and engorgement of the mucosa were noted. This reaction disappeared following vagotomy. We have conducted similar observations on four patients and believe these observations to be correct (fig. 1). Should this prove true the accepted ideas concerning vagal innervation of the colon must be altered.

Lium's [9] work suggested a sound basis for vagotomy in ulcerative colitis. By removing the prevertebral ganglions in dogs, he produced a bloody diarrhea and lesions similar to clinical colitis in man. However, when vagotomy was performed simultaneously these lesions did not develop.

Schmidt's [10] results utilizing pyridine silver sections for degenerated nerves suggest that vagal fibers are distributed at least as far as the distal end of the tranverse colon and that sacral fibers are distributed to the entire colon.

Only future observations will decide whether or not the vagus supplies the entire colon. It is my thought that it is possible for a synapse to exist between the vagus and the sacropelvic nerves which might transmit the impulse and thereby account for the proctoscopic observations which have been described.

INVOLVEMENT OF THE SMALL BOWEL

The ileocecal valve apparently does not act as a barrier to the cephalad progression of the disease. The condition may extend to the ileum and in some instances even to the jejunum; however, it is usually the terminal portion of the ileum which is involved. So-called segmental or right-sided colitis is associated with a fairly high incidence of ileac involvement.

Matt [11] has reported a case of segmental ileitis associated with an intra-abdominal abscess which was found to contain a pure growth of Bacterium necrophorum. Dragstedt, Dack and Kirsner [12] believe that they have sufficient evidence to prove that this bacterium is one of the etiological agents of chronic ulcerative colitis. Time and further investigation will prove whether or not this organism is associated with this disease and, if so, whether or not it is the cause or effect of it.

It is interesting to compare the conflicting statistical data found in the literature regarding the incidence of ileac involvement. McKittrick and Miller [13] reported a 1.3 per cent ileac involvement. McMillan [14] stated that approximately one fourth of his cases showed associated terminal ileitis. Cattell [15] observed that one sixth of his cases showed such involvement, and Crandon, Kinney and Walker [16] reported a 39 per cent incidence. Dennis [17] stated that he found ileac involvement in 33 per cent of his cases. McCready and associates [18] reported on the incidence of ileac involvement in 28 per cent of 103 cases of idiopathic ulcerative colitis. In my series of 21 cases, in 7 (33.3 per cent) there was an associated regional enteritis in one form or another.

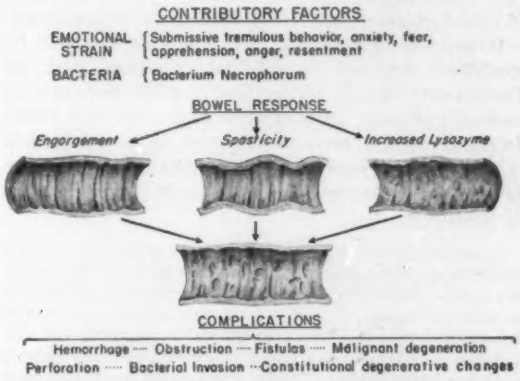


Fig. 1.—Diagrammatic representation of the possible contributory factors and bowel response in chronic nonspecific ulcerative colitis.

McCready and associates [18] were of the opinion that ileac involvement was one of the factors which retarded the healing process in ulcerative colitis. Two of my cases bear out this contention. The view that involve-

6. Grace, W. J.; Wolf, S., and Wolff, H. G.: Life Situations, Emotions and Chronic Ulcerative Colitis, J. A. M. A. **142**: 1044-1048 (April 8) 1950.
7. Wolf, S., and Andrus, W. D.: The Effect of Vagotomy on Gastric Function, Gastroenterology **8**: 429-440, 1933.
8. Holman, C. W.: In discussion on Dennis and others.[2]
9. Lium, R.: Peptic Ulcer and Diarrhea Following Removal of the Prevertebral Ganglia in Dogs, Surgery **9**: 538, 1941.
10. Schmidt, C. A.: Distribution of Vagus and Sacral Nerves to the Large Intestine, Proc. Soc. Exper. Biol. & Med. **30**: 739-740, 1933.
11. Matt, J. G.: Segmental Ileitis; Possibly Caused by Bacterium Necrophorum, Ann. Surg. **131**: 277-280, 1950.
12. Dragstedt, L. R.; Dack, G. M., and Kirsner, J. B.: Chronic Ulcerative Colitis, Ann. Surg. **114**: 653, 1941.
13. McKittrick, L. S., and Miller, R. H.: Idiopathic Ulcerative Colitis: Review of 149 Cases with Particular Reference to Value of and Indications for Surgical Treatment, Ann. Surg. **102**: 656-673, 1935.
14. McMillan, F. L.: Ileocecal Granulomas, Illinois M. J. **81**: 15-20, 1942.
15. Cattell, R. B.: Technic of Total Colectomy for Ulcerative Colitis, Surg. Clin. North America **24**: 661-674, 1944.
16. Crandon, J. H.; Kinney, T. D., and Walker, I. J.: Perforation of Ileum Following Late Ileostomy for Ulcerative Colitis, New England J. Med. **230**: 419-421, 1944.
17. Dennis, C.: Ileostomy and Colectomy in Chronic Ulcerative Colitis, Surgery **18**: 435-452, 1945.
18. McCready, F. J.; Bargen, J. A.; Dockerty, M. B., and Waugh, J. M.: Involvement of the Ileum in Chronic Ulcerative Colitis, New England J. Med. **240**: 119-127, 1949.

ment of the terminal ileum is sort of a "regurgitation" through the ileocecal valve is held by Crohn and Rosenak,[19] Baird,[20] McMillan,[14] Bargen [21] and Cave.[22] Crohn and Rosenak [19] stated that the pathological features, which differentiate this ileac involvement from primary ileitis, were that the ileum failed to show the hyperplastic, granulomatous and stenotic appearance which is so characteristic of primary ileitis. Instead the ileum revealed flat superficial ulcerations similar to those seen in the colon with ulcerative colitis. Mallory [23] stressed the extensive invasion of the deeper layers of the small bowel wall and the tendency to fistula formation in regional ileitis; however, this was absent in the ileum involved in idiopathic ulcerative colitis.

COMPLICATIONS

That energetic and immediate treatment is indicated in cases of idiopathic ulcerative colitis needs no more emphasis than a mere listing of the serious complications which may be associated with this condition: (1) constitutional and visceral degenerative changes; (2) hemorrhage; (3) obstruction; (4) perforation; (5) fistula formation, and (6) malignant degeneration.

It must be agreed that ulcerative colitis should be considered primarily a medical condition, and, as Thorlakson [24] stated, 60 per cent of these cases remain medical problems. It is in those cases, however, which do not respond to medical treatment, or in which some of the above mentioned complications occur, that one or more of the modern forms of surgical therapy must be instituted.

Constitutional and Visceral Degenerative Changes.—Chronic invalidism is found commonly in patients with chronic ulcerative colitis. All types and degrees of nutritional deficiencies, as well as toxemia, anemia, sepsis, polyarthritis and various dermatitides have been recorded. Maldevelopment and secondary sexual characteristics also appear occasionally. Patients with these degenerative changes, if permitted to go untreated, take a steady downward course until they become completely incapacitated and bedridden and finally die.

Hemorrhage.—This complication may be acute or chronic, recurrent or continuous. Replacement of whole blood becomes imperative in patients showing a reduction in total blood volume. Although some might not consider hemorrhage an indication for surgical intervention, I have found that most of my patients with hemorrhage responded favorably to vagotomy.

Obstruction.—Obstruction might result from the healing process or malignant degeneration associated with this condition. The location of the lesion, whether in small or large bowel, might be of some diagnostic aid; however, the nature of the lesion can be determined only by resection and histological study. Although it was stated previously that the fibroplastic reaction is minimal in enteritis with colitis, nevertheless one of my patients required small bowel resection for intestinal obstruction caused by a large, nonspecific, granulomatous mass; this developed after both transabdominal and transthoracic vagotomies had been performed. This case will be described subsequently.

Perforation and Fistula Formation.—This complication may occur in either an acute or a chronic form. If a slow chronic perforation takes place an abscess can form which may require drainage or may even form a fistula. Perirectal infections are prone to result in abscesses and fistulas, which become most disabling. Stricture formation may result in incontinence and in the development of rectovaginal fistulas. It should be recalled that perforation can take place in the small bowel as well as in the colon. Jankleson, McClure and Sweetsir [25] reported 11 cases of acute bowel perforation, the mortality of which was 100 per cent; in 4 of these cases the perforation was in the terminal part of the ileum, and in the remaining 7 cases various segments of the colon were involved. McCready and co-workers [15] reported a perforation incidence of 17 per cent.

Malignant Degeneration.—It has been established definitely that malignant degeneration of the colon, usually carcinomatous in type, may occur. Lynn [26] reviewed 1,400 cases of ulcerative colitis and found that carcinoma developed in 1.9 per cent of this group. Dennis and others [2] stated that in 14 per cent of cases carcinoma developed. Jackman, Bargen and Helmholz [27] reported an incidence of carcinoma in 6.3 per cent of 95 children with this condition. Bargen [28] stated that in 20 cases of malignant lesions associated with chronic ulcerative colitis 17 were carcinoma, 2 lymphosarcomas and 1 leukemia. Cattell and Sachs [29] pointed out that a 7 per cent incidence of malignancy occurred in ulcerative colitis. They stated that in one of every three patients who had this disease for nine years or longer there developed carcinoma, and that once malignant growth began there was rapid and early dissemination, the patients usually being inoperable. Bassler and Peters [30] described a case of fibrosarcomatous degeneration associated with chronic ulcerative colitis; the usual type of sarcomatous degeneration is lymphosarcoma. Their patient died three months postoperatively.

TRANSABDOMINAL VERSUS TRANSTHORACIC VAGOTOMY

Standard surgical procedures which are utilized today for ulcerative colitis include: segmental resection, ileostomy, ileostomy with resection, ileosigmoidostomy with partial colectomy and vagotomy. One cannot deny that the surgical procedure of today is just a means to an end until the proper and specific therapy is found. It is with this in mind and with a desire to avoid resection or an "ileostomy life" that vagotomy should be considered. McKittrick and Moore [31] emphasized the burden placed on both the surgeon and the patient when ileostomy is contemplated, when they stated: "Despite the widespread impression that early ileostomy will result in control of the pathologic condition of the colon and permit later closure in a high percentage of cases, we know of no convincing evidence to support this."

It cannot be denied that handling of the inflamed colon or small bowel does produce trauma regardless of how minimal this might be. Hence, one might

19. Crohn, B. B., and Rosenak, B. D.: Combined Form of Ileitis and Colitis, J. A. M. A. **106**: 1-7 (Jan. 4) 1936.
20. Baird, L. W.: Regional Enteritis, Texas State J. Med. **35**: 760-764, 1940.
21. Bargen, J. A.: The Modern Management of Colitis, Springfield, Ill., Charles C Thomas, Publisher, 1943, p. 322.
22. Cave, H. W.: Inflammatory Lesions of Small Intestine: Surgical Aspects, J. A. M. A. **127**: 456-458 (Feb. 24) 1945.
23. Mallory: Case Records of the Massachusetts General Hospital (Case 22391), New England J. Med. **215**: 584-587, 1936.
24. Thorlakson, P. H. T.: Chronic Ulcerative Colitis, J. Internat. Coll. Surgeons **12**: 439-450, 1949.
25. Jankleson, I. R.; McClure, C. W., and Sweetsir, F.: Idiopathic Ulcerative Colitis: Perforation of Bowel, Rev. Gastroenterol. **12**: 31-37, 1945.
26. Lynn, D. H.: The Relationship of Chronic Lesions to Carcinoma of the Colon: Chronic Ulcerative Colitis, Collective Review, Internat. Abstr. Surg. **81**: 269 (Oct.) 1945.
27. Jackman, R. J.; Bargen, J. A., and Helmholz, H. F.: Life Histories of Ninety-Five Children with Chronic Ulcerative Colitis, Am. J. Dis. Child. **59**: 459 (March) 1940.
28. Bargen, J. A.: Chronic Ulcerative Colitis Associated with Malignant Disease, Arch. Surg. **17**: 561 (Oct.) 1928.
29. Cattell, R. B., and Sachs, E.: Surgical Treatment of Ulcerative Colitis, J. A. M. A. **137**: 929-935 (July 10) 1948.
30. Bassler, A., and Peters, A. G.: Fibrosarcoma, an Unusual Complication of Ulcerative Colitis: Report of a Case, Arch. Surg. **59**: 227-231 (Aug.) 1949.
31. McKittrick, L. S., and Moore, F. D.: Ulcerative Colitis, J. A. M. A. **139**: 201-208 (Jan. 22) 1949.

assume that a transabdominal operation should be avoided in ulcerative colitis; however, the high incidence of malignant degeneration must be considered. One must also keep in mind the possibility of an intestinal obstruction produced by nonspecific granulomatous formations which may be found associated with this condition. It is for these two reasons that I consider careful and gentle exploration the lesser of two evils. Hence, I lean toward the transabdominal vagotomy even though the transthoracic procedure is easier technically to perform and may result in a more complete severance of the vagi. The technics of these procedures have been standardized and described completely in earlier publications [32] (fig. 2).

The anatomy of the vagus nerves, particularly their multipatterned arrangement, must be kept in mind if a complete vagal section is to be accomplished. Gastroenterostomy was not done in conjunction with vagotomy in any of my cases. The immediate postvagotomy gastric atony which might result can be controlled with three days of continuous intragastric siphonage. In none of the patients was postvagotomy vomiting a serious complication.

Results of Vagotomy in Idiopathic Ulcerative Colitis and Regional Enteritis

	Asymptomatic	Improved	Condition Unaffected
Transabdominal vagotomy	6*	5	3
Transthoracic vagotomy	5	1†	1†
Totals	11	6	4

* Two patients of this group had ileostomies performed elsewhere.
† Ileostomy performed elsewhere.

The Hollander insulin test has been used to determine complete division of the nerves. However, in some cases, the test results were confusing, since they did not indicate complete division, although the patients were completely asymptomatic.

In the event that the transabdominal operation has not produced the desired improvement, I do not hesitate to perform a transthoracic vagotomy at a later date. This was found necessary in two of my cases, one operation resulting in a pronounced and the other in a moderate improvement.

RESULTS OF VAGOTOMY

The accompanying table summarizes the over-all results in the 21 cases treated. One of the 8 cases listed under transabdominal vagotomy was mucous colitis rather than true idiopathic ulcerative colitis. This patient, the wife of a physician, had been having 10 to 30 stools (mainly mucus) per day. She was almost totally bedridden and entered the hospital weighing 91 pounds (41.3 Kg.). Immediately after vagotomy her stools numbered one to two a day and were well formed with little or no mucus. At present, 13 months postoperatively, she has gained 39 pounds (17.7 Kg.) and is leading an active normal life. This was a most gratifying result.

Case 5 was interesting in that the patient had a fulminating enterocolitis which involved the small bowel from the ligament of Treitz to the ileocecal valve and involved the large bowel from the ileocecal valve to the anus. She had an ileostomy performed elsewhere, went rapidly downhill and was sent home to die. A bilateral subdiaphragmatic vagotomy resulted in an immediate cessation of symptoms; however, this was only temporary, and her symptoms recurred. The Hollander insulin test suggested that some of the vagal fibers might have been missed. A transthoracic vagotomy was performed. This resulted in immediate improvement, and the patient was discharged. Five months later she returned with a complete, nonstrangulated obstruction, due to a nonspecific granuloma, in the small bowel; the obstruction was found at the lower jejunum and was about the size of a large lemon. A small bowel resection was performed with an end to end anastomosis. To date the woman has gained 41 pounds (18.6 Kg.), has a well functioning ileostomy,

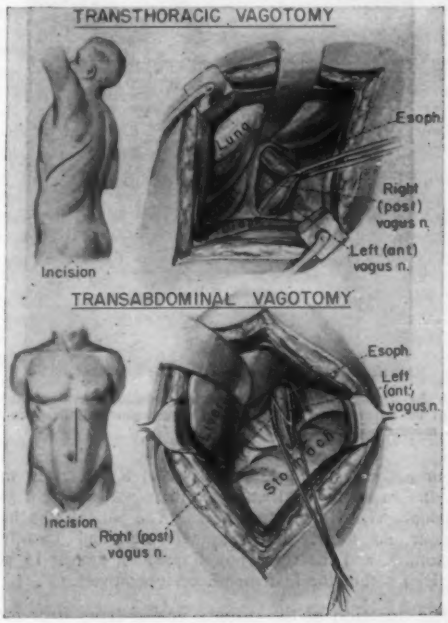


Fig. 2.—Transabdominal and transthoracic vagotomies.

is enjoying excellent health and is back to work. In this case it was possible to observe both the small and the large intestines some months following the vagotomy. There was definite visual evidence of healing and regression of the inflammatory process.

Case 19 involved ulcerative colitis with a previous history of amebic dysentery. The amebic phase had entirely disappeared following medical treatment, but the ulcerating colitis became progressively worse; this responded favorably to transabdominal vagotomy.

Postoperative Proctoscopic Observations.—Proctoscopic studies were made in 18 of the 21 cases. In six cases the diseased mucosa had assumed a practically normal appearance. In seven cases there were signs of definite improvement. In three cases the rectal mucosa seemed to be unchanged. In two cases the mucosa showed no abnormality at any time.

32. Thorek, P.: Vagus Nerve Section (Vagotomy) in the Treatment of Peptic Ulcers: Review of Literature and Report of Personal Cases, J. A. M. A. 135: 1141-1145 (Dec. 27) 1947.

Roentgen Changes.—In 19 of the 21 cases herein reported, roentgen evidence of improvement was found. Figure 3 is a typical example of the roentgen observations both preoperatively and postoperatively.

Weight.—The average weight gain in this series varied from 20 to 30 per cent. That gain of weight is one of the outstanding results in these patients cannot be overemphasized. One

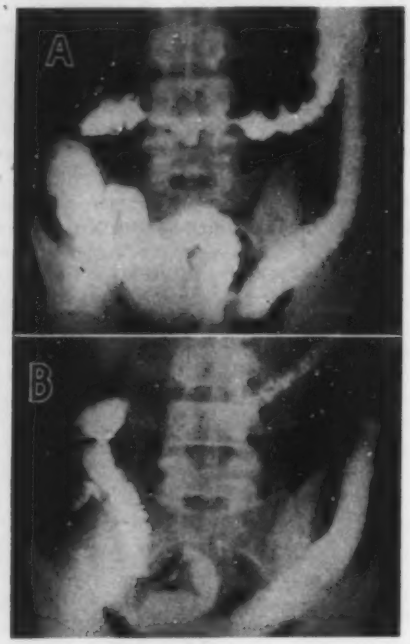


Fig. 3.—*A*, preoperative roentgenogram showing typical conditions in one of the patients in this series; *B*, roentgenogram of the same patient three months postoperatively.

of our patients gained 45 pounds (20.4 Kg.) in four months (fig. 4). In another extreme case there was a weight gain of 17 pounds (7.7 Kg.) in two weeks. The patient who had the previous ileostomy, the transabdominal and transthoracic vagotomies, and the small bowel resection gained 14 pounds (6.4 Kg.) within the first month postoperatively.

The duration of the disease varied from four months to five years in the patients in this series. Pus, blood and mucus have disappeared in over half of the cases,

Fig. 4.—Photographs of (*A*) one of the patients in this series on the fifth postoperative day; his cachetic appearance is evident; (*B*) same patient four months postoperatively enjoying a rather full meal and having gained 45 pounds (20.4 Kg.), and (*C*) same patient four months later, showing firm healing of the scar and excellent nutritional state.

and much improvement has been shown in the remaining half. Spasms have been diminished tremendously.

Based on the foregoing data it can be stated that in 80.9 per cent of the cases in this series the patients became asymptomatic or improved after vagotomy. There was no mortality although some of the patients were extremely ill prior to surgical intervention. This compares favorably with the statistical data presented on ileostomy in ulcerative colitis. McKittrick and Moore [51] reported on 149 cases of ileostomy performed as the initial (or only) procedure for ulcerative colitis; 22, or 14.8 per cent, of these patients died. The majority of these deaths resulted from a continuation of the disease following hemorrhage or perforation.

At the present time I have been unable to determine any criteria which will prognosticate a favorable or an unfavorable response to vagotomy. Further study may enable me to evaluate these cases more efficiently preoperatively.

SUMMARY

Vagotomy was performed in 21 cases of chronic, nonspecific, ulcerative colitis, and the results are evaluated. A favorable response was shown in 80.9 per cent of these cases. No deaths occurred in this series. Some cases in which there was small bowel involvement also showed improvement. To date it has been difficult to select patients and prognosticate those who will respond favorably.

The transabdominal operation is preferred to the transthoracic, since it is necessary to rule out malignant degeneration and obstructing lesions.

Recent observations suggest that our present concept of vagal innervation of the colon might have to be altered.

At present none of these patients has suffered any serious ill effects, and since most of them have shown improvement it is believed that vagotomy in chronic, nonspecific, ulcerative colitis warrants further investigation.

In so distressing and depressing a malady as ulcerative enterocolitis the success of any new form of treatment might lead to unwarranted enthusiasm. This presentation, therefore, draws no positive conclusions but is intended primarily to stimulate interest in this field.

25 East Washington Street (2).

ABSTRACT OF DISCUSSION

DR. ALBERT F. R. ANDRESEN, Brooklyn: I was impressed by Dr. Thorek's reason for adopting vagotomy instead of the commonly employed ileostomy, complete and partial colectomy, segmental resection and anastomoses. He wants to prevent the patient from leading an "ileostomy life." This is a laudable purpose, and it is refreshing to find a surgeon who recognizes that we are going through a period of excessive surgery for ulcerative colitis. With the good results to be obtained so uniformly and rapidly when the allergic approach is used in treatment it is a shame that so much unnecessary surgery is performed. Many lose sight of the fact that allergic reactions are favorably influenced by intercurrent febrile diseases or by operations, so that many of the good results reported from surgical intervention have probably resulted from this nonspecific effect. Dr. Thorek's arguments in favor of vagus innervation of the entire colon are not convincing. He quotes Grace, Wolf and Wolff as showing the relationship between emotional stress and ulcerative colitis but fails to mention that in their vagotomized patient this relationship was unchanged. Ivy has shown the harmful effect of vagotomy on the ileocecal sphincter, and the bad effects on gastric function are well known, but Dr. Thorek minimized

them, stating that postoperative suction obviates them. In discussing the frequency of ileac involvement in ulcerative colitis, varying from 1.3 per cent in McKittrick's series to 33.3 per cent in his own, he suggests that bacterial infection may be the cause, perhaps the Bacterium necrophorum described by Matt and Dragstedt and others. If this were so, how could vagotomy be of help? Although he states that he favors medical treatment and that operation is indicated only for complications, Dr. Thorek lists several frightening complications to prove that vagotomy should be done to prevent them. He points out one advantage of vagotomy; it obviates damage from handling of the diseased intestine, yet he recommends careful examination of its entire length to find possible evidence of malignant degeneration. The statistics on development of carcinoma in ulcerative colitis are quoted as varying from 1.9 to 7 per cent, the varieties depending on the duration of the disease. In reporting his results Dr. Thorek fortunately shows no mortality, as compared with 15 to 20 per cent with the more serious operations. However, while quoting the improvement in weight and in proctoscopic and roentgenologic observations, he states that only in "over half" of his cases blood and mucus disappeared from the stools and in the other half there was much improvement, with spasms diminished; he concludes that he got good results in 80.9 per cent of cases with operation. I am glad that Dr. Thorek warns against unwarranted enthusiasm for vagotomy. I believe that, as in the treatment of peptic ulcer, this operation will gradually be abandoned, being merely a phase of the present trend in favor of "psychosomatic surgery."

Dr. Emile Holman, San Francisco: It is highly important that every possible approach to ulcerative colitis should be explored to its fullest extent. We must reiterate, however, that this approach is highly experimental, and we must not neglect proved surgical methods of treatment and the newer treatment with antibiotics. I should like to mention an experience in the practice of my brother in New York, to which Dr. Thorek alluded, namely, the case of a young man who for two years had ulcerative colitis for which an ileostomy was performed. There followed a year and a half of observation, during which time there developed a remarkable prolapse of the terminal portion of the ileum and the cecum with eversion of the mucosa, permitting observation under various conditions of stress and strain. When this patient was angered it was observed that his bowel became vigorous in its peristalsis, and even bleeding occurred under the stimulus of anger. A complete vagotomy was performed. During the following two weeks, there was complete quiescence of this prolapsed bowel, and anger no longer produced the segmental contractions, the vigorous peristalsis, or the bleeding. However, after two weeks, the whole condition recurred, even more aggravated than it was before vagotomy. It illustrates that one must be very conservative in the ultimate evaluation of any method of therapy in this disease.

We must recognize, also, that vagotomy for other conditions such as ulcer is sometimes followed by a distressing diarrhea. Here vagotomy is expected to reduce or inhibit diarrhea. Obviously, one should not throw a cold blanket on these approaches to a distressing disease, and one should be indebted to those surgeons who are willing to undertake these investigations for us.

Dr. Sidney Portis, Chicago: The problem which concerns us is what vagotomy accomplishes in the treatment of ulcerative colitis. I think all of us are agreed that ulceration is a result of enzyme digestion. In ulcerative colitis this enzyme digestion must come from enzymes from the small intestine, from bacteria, or from those secreted by the wall of the colon itself. I have believed for many years that the trypsin secreted by the pancreas is a definite factor in attacking the unprotected mucous membrane of the left half of the colon to produce ulceration. Therefore vagotomy can be of benefit only in slowing down the motility of the small intestine in order that the pancreatic enzymes will not reach the unprotected mucous membrane of the colon in such high titer and unattenuated. As far as vagotomy itself is concerned, there is no evidence today that the vagus nerve innervates the descending portion of the colon. The best evidence seems to indicate that this portion of the colon is subserved by the parasympathetic nervous system originating in the sacropelvic nerves. I have never been convinced that vagotomy is the operation of choice in the treatment of ulcerative colitis. If any operation is to be done, as far as the nervous system is concerned, one should think of the possibility of a chordotomy. But who wants to do a chordotomy? In a personal communication to me concerning about 500 paraplegics, not one case of ulcerative colitis was observed. This points to the possibility that the excluding of the sacropelvic parasympathetic nervous system may play an important part in the causation of this disease. Furthermore, I am not sure that the results of vagotomy are any better than the results of medical or other surgical procedures. I don't think a vagotomy will prevent the transformation into carcinomatous proliferation. When a patient has a colon that is so badly diseased and thickened that neither medical treatment nor psychotherapy has beneficial results, then there is only one approach, and that is a colectomy far above the diseased process. If there is a 5 per cent mortality from carcinoma, certainly removal of the diseased organ is of definite import. I see no reason for ileostomy, either as an emergency or palliative operation. In the course of treatment of this disease, however, I do see ileostomy as an operation of choice in the preoperative treatment leading to a colectomy. I am convinced that the mortality and morbidity from colectomy in well selected cases of long-standing ulcerative colitis would be greatly decreased if internists would not procrastinate and send the surgeon a moribund patient. The choice of operation should be made much earlier than it has been in the past.

Dr. J. Arnold Bargen, Rochester: I have been following various forms of therapy for ulcerative colitis for more than 25 years, and I have always been in favor of evaluating any form of treatment that sounded reasonable. My observation of patients who have had vagotomy leads me to the conclusion that the operation definitely helped in some of the milder cases; it did not help in the more severe and advanced cases, and some were made much worse. Surgery need not be employed for the moderately severe cases. Although Dr. Thorek speaks of unselected cases, perhaps it would be better if they were selected, but I am not sure which kind should be selected for this surgical procedure. Many physicians have probably used banthine® (beta-dimethylaminoethyl xanthene-9-carboxylate) in the treatment of peptic ulcers. It is a drug which definitely inhibits motility of the digestive tract. It inhibits stomach motility completely if given in large enough doses. On the other hand, if it is given in such doses to patients with ulcerative colitis with severe diarrhea, it affects them almost not at all. If patients are given enough to affect the bowel symptoms, then there are apt to be unpleasant side effects, as from overdose of atropine: this gives one the impression that if the vagus affects the intestinal tract at all, it does not affect the portion down beyond the cecum, or perhaps the right half of the colon. Banthine® may favorably affect diarrhea due to diseases of the small intestine by causing motor inhibition. How then would it favorably affect the diarrhea of ulcerative colitis? Perhaps by its effect on motility of the small intestine, but I wonder whether vagotomy is the operation for ulcerative colitis. It will take a good deal more study to answer this question.

Dr. Frank H. Lahey, Boston: I have never been enthusiastic about vagotomy for ulcerative colitis because it seems to me a round about way to deal with a tangible lesion. There are methods of dealing with ulcerative colitis such as medical management, which is successful in about 60 per cent of the cases, ileostomy when medical management is not successful and total colectomy and removal of the rectum in those patients who have additional complications after ileostomy. With the methods now at hand better results could be obtained with the complicated cases of ulcerative colitis if ileostomies could only be done earlier. In our first group of 145 ileostomies, up to 1947, done often too late, the mortality was 22 per cent, and in the second group of 70 cases, from 1947 to 1949, when the ileostomy was done early, the mortality was 4 per cent. It will take a long time to find out the actual percentage of malignant degeneration in patients with ulcera-

tive colitis who are permitted to retain their colons, but it seems clearly established from the evidence that it is increasing.

The other thing that I do not like about this problem of the occurrence of malignant degeneration in patients with ulcerative colitis is that it is so obscured and overshadowed by the disease itself, that is, ulcerative colitis. I do not believe that a diagnosis can be made in these cases by palpation of the colon while one is doing a vagotomy, because a great deal of damage may be done by dissemination of infection infiltrating the wall of an inflamed and indurated colon. The diagnosis of malignant degeneration in a patient with ulcerative colitis can be made only when a tumor can be demonstrated and when bright blood appears. By that time the malignant disease is too advanced to permit one to save the patient. It would be my inclination in all patients who have had complications with ulcerative colitis that require an ileostomy to follow it with total removal of the colon and rectum. There is today a positive treatment for ulcerative colitis which will relieve patients of all their symptoms, which will completely rehabilitate them, which will permit them, if they are young women, to marry and have babies and which will permit them to enjoy all the activities of life. In such complicated cases that cannot be handled medically, ileostomy and total removal of the colon and rectum are really successful.

DR. ALBERT ROWE, Oakland, Calif.: I agree with Dr. Andresen that allergy requires more general recognition in the causation of chronic ulcerative colitis. Atopic allergy due to foods and at times to inhalants and drugs so often has proved to be the major cause of chronic ulcerative colitis in our practice that it deserves further emphasis. When it is the sole cause, the control of food, inhalant (especially pollen) and drug allergies usually gives good results. But when secondary infection is a complication, its control also is most necessary. Indeed, the atopic allergy may be so moderate in a few patients that the control of the infection alone may suffice to subdue the symptoms. I can confirm the value of the new antibiotics when secondary infection occurs. Aureomycin is proving more valuable in my experience than chloramphenicol. In one case of seasonal allergy with pollen as the apparent major cause, control of the secondary infection required administration of aureomycin by vein for several days. The sulfonamides are less effective in our experience, although the drug azopyrin (salicylazosulfapyridine), recommended by Dr. Bargen, produces good results in some patients. Colonic allergy to the sulfonamides, however, has to be kept in mind. With this control of atopic allergy and, when necessary, of secondary infection, indications for ileostomy and later colectomy have greatly decreased in our practice. Some of our patients in the last three or four years who have given up our treatment have had ileostomies, all of which have not been satisfactory. But in patients who have cooperated in the antiallergic and medical treatment in the last three years, only one ileostomy has been done for cicatrizing obstruction of the cecum. Even when these operations are done, the continued consideration of atopic allergy is wise, especially if complicating ileitis is present or gradually develops. Atopic allergy, especially to foods, may interfere with healing of the ileostomy or may produce enteritis or irritability of the small bowel even after colectomy.

DR. WALTER L. PALMER, Chicago: The suggestion of vagotomy for ulcerative colitis has never seemed to me to be a rational one. Results as good as these are reported by medical measures. Dr. Lahey's concept of surgery, complete colectomy when one is dealing with neoplasm or stricture, seems sound. The problem, of course, is to know when these complications are present. At times infection plays a significant role in ulcerative colitis; then the various antibiotic and chemotherapeutic drugs are of definite value. However, the problem of appraisal has been extremely difficult. The effect of these drugs on the bacterial flora is relatively transitory, lasting only two or three weeks. There must be some common denominator in the good results obtained by vagotomy, by various medical measures, by antibiotics or by elimination diets. The disease certainly for a number of months or years is reversible. The problem is to find the appropriate treatment for this phase of the process.

DR. PHILIP THOREK, Chicago: I hoped that this paper would be provocative of spirited discussion, and it is gratifying to know that it stimulated this enthusiastic response. Regarding Dr. Andresen's remarks on the nerve supply, I believe that he has stressed my point exactly. Nobody truly understands the nerve supply to the colon. Neither anatomists nor physiologists can answer this question. Although paradoxical, it is nevertheless true in the majority of these cases that the diarrhea subsided following vagotomy for ulcerative colitis.

Regarding the work of Wolf and Andrus, I will substantiate my remarks by quoting directly, that "After vagotomy, although anger and resentment were successfully aroused, no observable changes in gastric function occurred." Also, I repeat that C. Holman found similar responses to emotional reaction in the terminal portion of the ileum and cecum. Interpreting his postvagotomy findings, after an early favorable response, he stated that the postoperative course was complicated by disturbances in motility of the upper portion of the gastrointestinal tract that made feeding difficult, which might well have been a factor in the unsatisfactory result following vagotomy. These early favorable responses prompted Dennis to study the rectal mucosa, and he has reported some encouraging results in a group of patients after vagotomy. We are conducting proctoscopic studies on patients, prevagotomy and postvagotomy, and preliminary observations in some of these cases show that the pronounced engorgement and petechial hemorrhages do not occur after vagotomy. Not enough time or evidence is available to draw any definite conclusions, but the evidence is highly suggestive that the vagus, directly or indirectly, has some effect on the rectal mucosa. Since it is assumed that vagotomy relaxes the large bowel, it therefore probably discourages bacterial stasis in the bowel wall. I agree with Dr. Lahey that to differentiate a neoplastic from an inflammatory lesion macroscopically with any degree of certainty is impossible. However, I prefer the transabdominal approach because it permits careful and gentle inspection of the involved bowel and the removal of an associated obstructing lesion which might prove to be malignant. To those discussants who emphasized less radical therapeutic measures, may I repeat my opening remarks that before any surgical treatment is contemplated, proper medical and psychiatric therapy have been thoroughly tried. However, these patients must not be "studied to death," nor must they be conservatively treated to the point of surgical irreversibility. Vagotomy warrants further careful investigation.

Osler and the Baltimore Fire of 1904.—On Sunday morning, February 7, Osler had gone to Washington to see Senator Hanna, who had been taken ill with typhoid fever. He got back in the late afternoon to find the business section of Baltimore in flames. . . . There were guests as usual not only at no. 1 but at no. 3 West Franklin Street, and in the afternoon every one gathered in the Oslers' dining room, where through the southern windows the conflagration could be seen approaching. That Osler, usually imperturable, was nervous, was evident from the way he twiddled his watch-chain and exceeded his allotted number of cigarettes through the anxious afternoon and evening. A policeman finally came to the door and said the block between Mulberry and Saratoga Streets near by was about to be blown up and that it was time they got ready to leave. A wagon was secured; some precious books were put in trunks; some china picked out; some linen; some clothes. . . .; just as the family was about to leave, the high wind shifted . . . By 2 a. m. they were notified that there was no further danger. . . . The probability that the Baltimore fire might seriously curtail the work of the hospital did not appear to disturb Osler's equanimity. . . . Meanwhile, he sent the following characteristic note to the President of the Hospital Board: 7.iii. 04.

Dear Judge Harland, In case we do not get a supplementary endowment for the Hospital I shall be very glad to place my salary ($5,000) for ten years at the disposal of the Trustees to be used in maintaining our publications. Please say nothing of it outside of the Committee. Sincerely yours, &c.—Harvey Cushing, The Life of Sir William Osler, London, Oxford University Press, 1926, vol. 1.

UNIPOLAR PRECORDIAL ELECTROCARDIOGRAMS IN VENTRICULAR ANEURYSM

George A. Pipilis, M.D., Athens, Greece
and
Paul H. Wosika, M.D., Ph.D., Chicago

Ventricular aneurysm, known since the description of Galeati nearly 200 years ago,[1] frequently remains an autopsy finding because of the nonspecific clinical features. Published studies concern a limited number of cases, and only a few have referred to all the improved laboratory methods now available for antemortem diagnosis. This paper reports five cases of ventricular aneurysm, proved pathologically, from the Illinois Masonic Hospital, one of which was diagnosed electrocardiographically because the tracing was characteristic of anterior myocardial infarction with persistent elevation of the RS-T segment over a two year period.

LITERATURE

Aneurysm may result from an abscess of the cardiac wall, trauma, ulcerative lesions of bacterial endocarditis or congenital defects, but nearly all cases are preceded by myocardial infarction.[2] The fibrosis of the healed infarction is weak and dilates because of intraventricular pressure. The time at which the fibrotic wall gives way in the formation of an aneurysmal dilatation has not been clearly determined. These are found as early as six weeks after coronary occlusion.[2e] Hypertension is not a prerequisite for the development of a ventricular aneurysm, since the majority of patients are normotensive.[2a] Three main types of this complication develop, located usually in the left ventricle in the region of the apex: (1) those which are dishshaped hollows in the heart wall and are often not particularly large; (2) the ordinary large, not strongly bulging aneurysm, which passes more diffusely into the normal heart wall, and (3) those saclike aneurysms with definite, constricted necks.[3] Rupture of the cardiac wall, a frequent complication of recent infarctions, rarely occurs in ventricular aneurysm.[4]

Estimates of the incidence of cardiac aneurysm vary from 9 to 38 per cent of all cases of myocardial infarction.[5] Males are affected predominantly, the average age being 65 years.[6] In the great majority of patients there is a history of an acute myocardial infarction. The patients have symptoms of chronic cardiac failure or chronic coronary insufficiency characteristic of the arteriosclerotic heart disease rather than the aneurysm. The symptoms are aggravated by the aneurysm and by cardiac arrhythmias, frequently ventricular tachycardia, which may develop.[7]

A precordial pulsation is the most frequent clinical sign of cardiac aneurysm. On percussion one finds that the cardiac limits are increased to the left following an abnormal line where an anterior aneurysm extends laterally. Auscultation reveals weak and distant heart sounds accompanied with an unusually strong cardiac pulsation but weak pulse. In rare cases a friction rub may be heard for years. A diastolic murmur has been found and registered stethographically in three cases of cardiac aneurysm.[8] One case of ventricular aneurysm has been followed over a 10 year period.[9]

Roentgenologic examination aids greatly in the diagnosis. The chest roentgenogram in cases of anterior ventricular aneurysm reveals: (1) broadening of the apex or angulation of the left border, giving the heart a square or rectangular appearance; (2) elongation of the heart to the left, and (3) a diffuse bulge or, more rarely, a localized hump on the left border.[3a] Less frequently, evidence may be found of adhesions between the heart and the chest wall, calcification of the wall of the sac or calcification of a contained clot. The aneurysms of the posterior ventricular wall are best seen with the patient in the left oblique position and may displace the esophagus. Fluoroscopically the following may be seen: (1) a diminished or absent pulsation in the region of the aneurysmal bulge; (2) a paradoxical pulsation of the supposed aneurysm, i. e., a systolic expansion of this area, and (3) calcification of the pericardium or the wall of the aneurysm.[7a] Roentgenkymography is an excellent method of recording the absence of pulsations of the aneurysm. The fluorocardiograms (electrokymograms) promise better interpretation of the motions of the ventricular wall.[10]

Electrocardiography in the diagnosis of ventricular aneurysm is controversial. Rowland [7a] writes: "The electrocardiogram has been thought by many to give little diagnostic aid, being only of corroborative value in that it showed evidence of cardiac infarction and helped in the location of the area infarcted."

Nordenfelt [11] used the three standard leads and lead IV_R. He found, in a large chronic aneurysm of the

Dr. Gordon B. Myers assisted in the preparation of this manuscript.

From the department of cardiology, Illinois Masonic Hospital, and the Chicago Medical School.

This study was aided by a grant from the William R. and Edith M. Crawford Fund for Cardiovascular Research.

1. Denolin, H., and Declercq, F.: Un cas d'anevrisme parietal du cœur suivi pendant quatre ans, Acta cardiol. **3**: 65, 1948.

2. (*a*) Brams, A. W., and Gropper, A.: Cardiac Aneurysm, Illinois M. J. **78**: 246, 1940. (*b*) Gross, H., and Schwedel, B. J.: The Clinical Course in Ventricular Aneurysm, New York State J. Med. **41**: 488, 1941. (*c*) Fulton, M. N.: Aneurysm of the Ventricle of the Heart, J. A. M. A. **116**: 115 (Jan. 11) 1941. (*d*) Fisher, L. R.: Cardiac Aneurysm with Rupture, Am. Heart J. **30**: 133, 1945.

3. (*a*) Blumgart, L. H.; Schlesinger, M. J., and Davis, D.: Studies on the Relation of the Clinical Manifestations of Angina Pectoris, Coronary Thrombosis and Myocardial Infarction to the Pathologic Findings, Am. Heart J. **19**: 1, 1940. (*b*) Mallory, K. G.; White, P. D., and Salgar, J. S.: The Speed of Healing of Myocardial Infarction, ibid. **18**: 647, 1939. Anderson, W. A. D.: Pathology, St. Louis, C. V. Mosby Company, 1948. Sternberg, M.: Das chronische partielle Herzaneurysma, Leipzig, F. Deuticke, 1914. (*c*) Appelbaum, E., and Nicolson, B. H. G.: Occlusive Diseases of the Coronary Arteries: An Analysis of the Pathological Anatomy in 168 Cases, with Electrocardiographic Correlation in 36 of These, Am. Heart J. **10**: 662, 1935.

4. Benson, L. R.; Hunter, C. W., and Manlove, H. C.: Spontaneous Rupture of the Heart: Report of 40 Cases in Portland, Oregon, Am. J. Path. **9**: 295, 1933. Fisher.[2d]

5. (*a*) Parkinson, J.; Bedford, D. E., and Thomson, W. A. R.: Cardiac Aneurysm, Brit. J. Radiol. **12**: 129, 1939. (*b*) Appelbaum and Nicolson.[3c]

6. Rosenberg, B., and Messinger, J. W.: The Electrocardiogram in Ventricular Aneurysm, Am. Heart J. **37**: 467, 1949. Parkinson, J.; Bedford, E. D., and Thompson, W. R. A.: Cardiac Aneurysm, Quart. J. Med. **7**: 455, 1938. Brams and Gropper.[2a] Parkinson, Bedford and Thomson.[5a]

7. (*a*) Rowland, D.: Cardiac Aneurysm: Report of a Case with Correlation of Clinical, Radiological and Electrocardiographic Findings, Ann. Int. Med. **19**: 349, 1943. (*b*) Blumgart, Schlesinger and Davis.[3a]

8. Scherf, D., and Brooks, M. A.: The Murmurs of Cardiac Aneurysm, Am. J. M. Sc. **218**: 389, 1949.

9. Young, D., and Schwedel, B. J.: Longevity in Ventricular Aneurysm; Report of a Case Followed over a 10 Year Period, Ann. Int. Med. **21**: 141, 1944.

10. Luisada, A. A., and Fleischner, F. G.: Studies of Fluorocardiography: Tracings of the Left Ventricle in Myocardial Infarction, Acta cardiol. **4**: 308, 1948. Luisada, A. A.; Fleischner, F. G., and Rappaport, B. M.: Fluorocardiography (Electrocymography): II. Observations on Normal Subjects, Am. Heart J. **35**: 348, 1948.

11. Nordenfelt, O.: The Electrocardiogram in Chronic Aneurysm of the Heart, Acta med. Scandinav. **102**: 101, 1939.

anterior wall of the ventricle, relatively low R waves in lead 1, deep S waves in leads 2 and 3, elevated RS-T segment in all leads, negative T wave in lead 1 and positive T waves in leads 2 and 3. A Q wave in lead 1 is a frequent finding. In four cases lead IV_R showed an absent R wave and deep Q-S complex. The RS-T segment in lead IV_R was elevated and passed directly into a positive T wave. He concluded that, "in all probability there are no electrocardiographic changes which are so typical of cardiac aneurysms that they allow a direct diagnosis."

Eliaser and Konigsberg [12] classified standard lead electrocardiograms which occur in cases of ventricular aneurysm. The first type occurred in 27.3 per cent of their cases and consisted of a downward directed major deflection in lead 1, with inversion of the T wave and an upright P wave. The ventricular complex in lead 3 showed an upward major deflection. The second type occurred in 36.4 per cent of their cases and presented ventricular complexes with upright

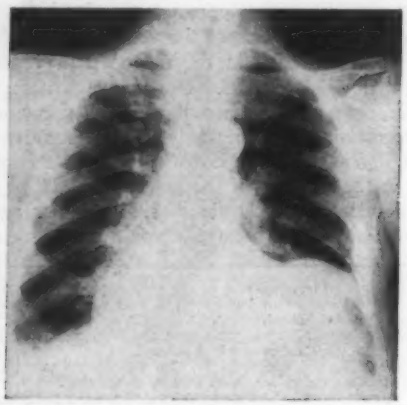


Fig. 1 (case 1).—Chest roentgenogram taken May 21, 1948.

major deflection in lead 1 and a downward deflection in leads 2 and 3. The deflections of lead 1 may or may not be of low amplitude. The third type occurred in 18.2 per cent of the cases and showed changes that were characteristic of left bundle branch block but not related to the ventricular aneurysm. In a number of cases, 18.1 per cent, the electrocardiograms could not be classified according to the above types. The authors [12] believe that the first two types of electrocardiograms are suggestive of ventricular aneurysm.

Goldberger and Schwartz [13] called attention to the augmented extremity potential aV_R. They found in 15 cases that the QRS complex of aV_R tended to be directed upward because of the unusual cardiac rotation resulting from the ventricular aneurysm. The presence of this pattern is not diagnostic of aneurysm, but, as the authors [13] conclude, ". . . the absence of this pattern in the right arm lead in a case of myocardial infarction indicates that a ventricular aneurysm is absent." They fail to discuss abnormalities in the precordial leads, although precordial lead 4 was taken in 10 cases and the illustrated tracings in the paper show elevation of the RS-T segment with absence of the R wave in six cases.

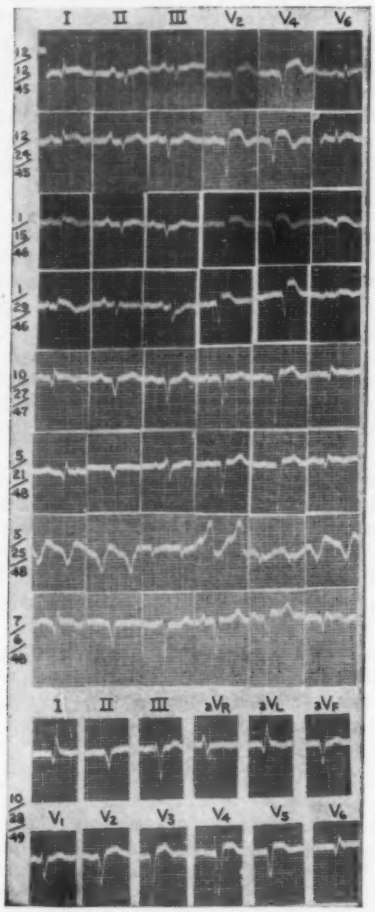


Fig. 2 (case 1).—Serial electrocardiograms taken from 1945 to 1949.

Rosenberg and Messinger [6] reported electrocardiograms characterized by Q waves and persistent elevation of the RS-T segment in the precordial leads over the septal area and the left side of the heart. The T waves were diphasic or inverted in all leads. In three additional cases they found no elevation of the RS-T segment in the single CF_4 lead. The precordial leads in six cases were taken as CF_4 and in two as multiple V leads.

Wilson [14] and Myers [15] emphasize the frequency of persistent RS-T segment elevation in cases of ventricular aneurysm following myocardial infarction, while Dressler and Pfeiffer [16] observed an RS-T segment

12. Eliaser, M., Jr., and Konigsberg, J.: Electrocardiographic Findings in Cases of Ventricular Aneurysm, Arch. Int. Med. 64: 493 (Sept.) 1939.
13. Goldberger, E., and Schwartz, P. S.: Electrocardiographic Patterns of Ventricular Aneurysm, Am. J. Med. 4: 243, 1949.
14. Wilson, F. N.; Rosenbaum, F. F., and Johnston, F. D.: Interpretation of the Ventricular Complex of the Electrocardiogram, Advances Int. Med. 2: 1, 1947.
15. Myers, G. B.; Klein, H. A., and Hiratzka, T.: II. Correlation of Electrocardiographic and Pathologic Findings in Large Anterohateral Infarcts, Am. Heart J. 36: 838, 1948.
16. Dressler, W., and Pfeiffer, R.: Cardiac Aneurysm: A Report of 10 Cases, Ann. Int. Med. 14: 100, 1940.

depression in CF_4 in four cases. This depression was due to the reversal of the electrodes, a common practice before 1938.

REPORT OF CASES

CASE 1.—*History and Course.*—P. P., a white man aged 63, was admitted to the hospital in October 1949 in severe cardiac failure. About four years before this admission he was hospitalized for five months because of acute myocardial infarction. Since then he had been hospitalized in cardiac failure in October 1947 and again in May 1948. The patient was treated with digitalis, ammonium chloride and mercurial diuretics. Physical examination revealed dulness of both lung bases with moist rales. The heart was enlarged, and the left cardiac border was confused with the pleural dulness at the axillary line. A soft systolic murmur was heard over the base of the heart. Auricular fibrillation was present. The blood pressure was 130/60. A roentgenogram of the chest showed an increase of the cardiac shadow with a huge bulge obliterating the lower third of the left lung. Fluid and congestive changes were present. One previous roentgenogram of the heart, taken in May 1948 and showing less congestion, is reproduced (fig. 1). The electrocardiograms of the patient during successive admissions are shown in figure 2. On Dec. 12, 1945 the standard leads showed small QRS complexes with a Q wave in lead 1, elevation of the RS-T segment in lead 1 and left axis deviation. The precordial leads V_2 and V_4 showed a Q-S deflection with elevated RS-T segment and monophasic upright T waves. Lead V_6 was characterized by small deflections of the qR type, and by RS-T segment elevation. A repeat tracing on Dec. 24, 1945 showed inversion of the terminal portion of the T waves in leads V_2 and V_4, but no QRS changes were noted. The curve taken Jan. 15, 1946 revealed an increase in the depth and duration of the Q wave in V_6 at the expense of the R wave. This pattern persisted in all subsequent tracings and was attributed to an extension of the infarct further into the lateral wall of the apex of the left ventricle. The pattern had become fixed by Oct. 27, 1947, and no further changes in either the QRS or T waves were noted on repeat tracings with sinus mechanism taken during 1948 and 1949. On May 25, 1948 a transient ventricular tachycardia was recorded, apparently arising from a focus in the vicinity of the left apical region, since V_6 was negative. Auricular fibrillation was present on Oct. 28, 1949. When the unipolar limb leads were obtained, these showed a deep Q and a late R wave in aV_L while aV_R and aV_F were characterized by an rS complex. The patient died on Oct. 30, 1949 in cardiac and renal failure.

Pathological Diagnoses.—The autopsy revealed generalized arteriosclerosis, severe arteriosclerosis of coronary arteries, an old infarct of the heart in the left ventricle, ventricular aneurysm with thrombus and pericardial adhesions.

Macroscopic Examination: The heart weighed 970 Gm. The largest part of the total mass extended to the left, giving a sabot-shaped heart. The epicardium was somewhat obscured over most of the anterior and posterior apex because large portions of the pericardium were firmly adherent to it by dense fibrous adhesions. The remainder of the epicardium was smooth and glistening with abundant fat and numerous petechial hemorrhages and dilated veins. The wall of the left ventricle varied greatly. The upper portion was 17 to 18 mm. thick. The lower portion of the ventricular wall, including the apex and extending upward for a distance of 9 cm., was only 3 mm. in thickness. Within this thin, somewhat saccular portion there was a yellowish, cheesy, old laminated thrombus 3 to 5 mm. thick. The myocardium at the apex varied from a whitish fibrous appearance to a somewhat yellowish appearance. The anterior descending coronary artery showed an area 5 mm. in length with the lumen decidedly narrowed by a large atherosclerotic plaque. Thrombus or complete occlusion was not demonstrated.

Microscopic Examination: The epicardium overlying the ventricular aneurysm was decidedly thickened and fibrosed with some vascularity, and adherent to this was a portion of normal-appearing pericardium. The section of the wall of the aneurysm revealed no myocardial fibers and was composed completely of dense fibrous, acellular, avascular connective tissue, within which could be seen quantities of hemosiderin and aggregates of lymphocytes. Overlying the aneurysm was an old thrombus which showed no sign of undergoing organization. Sections taken near the edge of the aneurysm revealed scattered bundles of greatly hypertrophied myocardial fibers within the dense fibrous tissue, particularly just beneath the epicardium. A section of the myocardium from the ventricular aneurysm showed pronounced hypertrophy of the muscle fibers and a decided degree of interstitial fibrosis with some focal scarring. The small arteries seen showed moderate degrees of fibrous intimal thickening.

This case was interesting because of the huge size of the ventricular aneurysm, filling all the left lung base, and because of the long duration of the aneurysm before the patient died. Probably the large adhesions of the external surface of the aneurysmal wall to the pericardium and the blood clot in the sac supported the thin and dilated wall and prevented rupture.

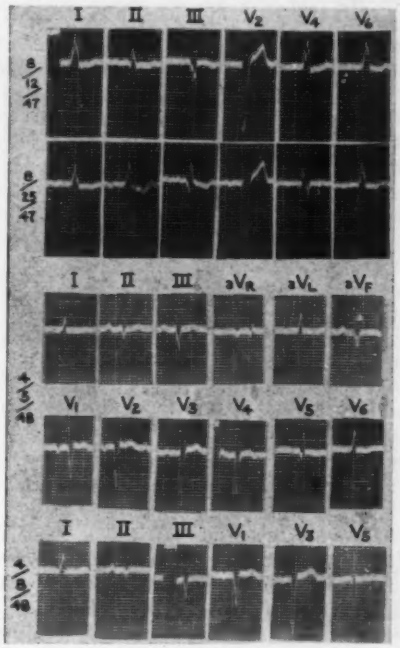


Fig. 3.—Electrocardiograms taken (case 2) Aug. 12 and 25, 1947 and (case 3) April 5 and 8, 1948.

CASE 2.—*History and Course.*—H. H., a white man aged 58, was admitted to the hospital in August 1947 with the complaints of precordial pain, weakness and hemoptysis. He was known to have had a posterior myocardial infarction nine years previously. He was free from symptoms until four weeks before admission. Physical examination revealed a pale, chronically ill man, slightly dyspneic. The heart was enlarged, and a systolic murmur was heard over the apex. Auricular fibrillation was present. At both lung bases moist rales were heard. The blood pressure was 120/70. Roentgenograms showed the cardiac shadow to be greatly enlarged, with a decided left ventricular enlargement. The electrocardiogram (fig. 3) taken Aug. 12, 1947 was characterized by a Q_1T_3 pattern, auricular fibrillation and an intraventricular conduction defect, as shown by slurred, notched and prolonged QRS deflections. The measurements necessitated the consideration of incomplete left bundle branch block, even though this diagnosis is difficult, and additional leads would have been most helpful. Digitalis may have accounted for the RS-T segment depressions of lead 1, V_5 and V_6. A repeat tracing on Aug. 25, 1947 (fig. 3) revealed that a Q-R supplanted the Q-S deflection in lead 3, and that the Q had become a notch

on the upstroke of the R in lead 2. These changes were considered to be postural, although pulmonary infarcts may have contributed to the change. The patient died in cardiac failure.

Pathological Diagnosis:—The heart weighed 490 Gm. Examination showed severe coronary arteriosclerosis, old infarcts of the heart, myocardial fibrosis and aneurysmal dilatation posteriorly, chronic passive congestion of the lungs and the liver, thrombosis of the branches of the pulmonary artery, multiple infarcts of the lung and generalized arteriosclerosis.

CASE 3.—*History and Course.*—C. B., a white man aged 64, was admitted to the hospital because of an inoperable carcinoma of the lung. Thoracotomy with permanent drainage had been performed elsewhere two months previously. A past medical history was unobtainable. The heart was normal. The blood pressure was 130/70. A roentgenogram of the chest revealed obliteration of the costal angle and thickened pleura over partially atelectatic middle and lower lobes on the right, increasing in density toward the mediastinum. The cardiac shadow was slightly displaced to the right side.

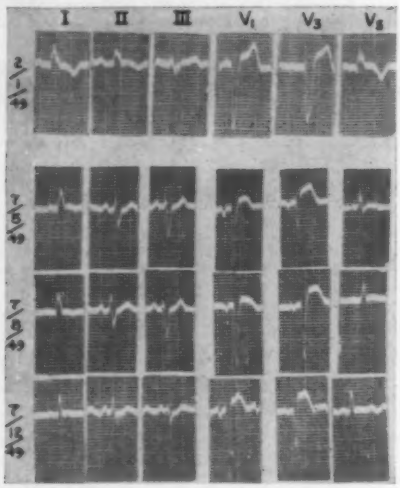


Fig. 4.—Electrocardiograms taken (case 4) Feb. 1, 1949 and (case 5) July 5, 8 and 12, 1949.

The electrocardiogram of April 5, 1948 (fig. 3) was characterized by left axis deviation, flat T wave in lead I, and a qrsr' type aVR of extremely low voltage. The precordial leads revealed a Q-S deflection from V_1 to V_4 (the small r was considered an artefact) and a Q wave in V_6 measuring 0.04 second. The T waves in V_5 and V_6 were slightly inverted, while the RS-T segment was elevated in leads V_1 through V_4 measuring 1 to 1½ mm. A repeat curve taken April 8, 1948 (fig. 3) showed no change except that in V_5 the Q wave was less deep and prolonged and the T wave appeared biphasic. These could have been due to difference in the placement of the electrode. The electrocardiographic pattern was compatible with the diagnosis of an old anteroseptal myocardial infarct extending into the later wall. The Q wave of 0.04 second duration in V_5 excludes right ventricular dilatation as a cause. The patient died on the thirty-fourth day of hospitalization.

Pathological Diagnosis.—The heart weighed 425 Gm. Examination revealed severe coronary arteriosclerosis, old myocardial infarction, an aneurysm of the left ventricle with a mural thrombus extending from the apex, and a squamous cell carcinoma of the right lung.

CASE 4.—*History and Course.*—E. S., a white man aged 65, was admitted to the hospital on Jan. 31, 1949, with the complaint of being short of breath and having frequent attacks of substernal pain of two weeks' duration. No previous history of cardiac disorder was obtained. The patient did not appear acutely ill but had pulmonary congestion. The heart was slightly enlarged, the tones were faint and a soft systolic murmur was heard at the apex. The blood pressure was 130/90. The roentgenograms showed the cardiac shadow to be generally widened with a tendency toward prominence of the left atrial salient. The aorta was tortuous, and there was calcareous degeneration in the region of the arch.

The electrocardiogram (fig. 4) taken on Feb. 1, 1949 showed a QRS complex of 0.14 second's duration and inversion of the T waves in leads 1, 2 and V_5. The RS-T segment was elevated in leads V_1 and V_5. The electrocardiogram was indicative of an anteroseptal myocardial infarction extending into the lateral wall. The most significant changes are found in lead V_5, which shows a broad notched R wave preceded by a definite Q wave. The notching of the R wave and lateness of the intrinsicoid deflection in this lead is diagnostic of a conduction defect in the left ventricle. The antecedent Q wave representing the initial negativity of the left ventricle cavity excluded left bundle branch block as a cause of this conduction defect. A pattern characterized by a distinct Q wave and a broad notched R wave like that in V_5 can be correlated with a patchy, old, healed anterolateral infarct of the outer wall of the left ventricle.[15] The Q-S in leads V_1 and V_2 is referable to the infarct of the anteroseptal wall of the left ventricle. The patient died Feb. 6, 1949.

Pathological Diagnoses.—The heart weighed 400 Gm. Examination showed coronary arteriosclerosis, old myocardial infarcts with aneurysm of the left ventricle at the apex, diffuse myocardial fibrosis, fresh myocardial infarcts and mural thrombi of the left ventricle.

CASE 5.—*History and Course.*—B. M., a white woman aged 73, a diabetic, was admitted to the hospital on July 2, 1949. Three weeks before her admission the patient had dyspnea, tightness of the chest and cough. No severe pain was noticed. The patient was treated with oxygen, digilanid,® mercurials, quinidine, morphine and insulin. Her condition from the beginning was exceedingly poor, and no improvement was obtained. The blood pressure was constantly low, 110/70. The roentgenograms showed enlargement of the heart, with prominence of the apex.

Electrocardiograms were taken on July 5, 8 and 12, 1949 (fig. 4). The three standard leads and the three precordials, V_1, V_2 and V_6, were included in all the electrocardiograms. The standard leads showed left axis deviation and slight inversion of the T wave in lead 1. The precordial leads showed an extremely small R wave in leads V_1 and V_2 and flat T waves. The RS-T segment in leads V_1 and V_2 was decidedly elevated in all the tracings; however, in the last tracing the RS-T segment was not domed upward, as in the two previous records, but was slightly concave, in part as a result of the position of the electrodes on the chest. The electrocardiographic interpretation was probable recent anteroseptal myocardial infarction, but after the third curve the pattern was considered fixed. The observations did not absolutely support the existence of an extending anterior myocardial infarction. On the fifteenth day of hospitalization the woman died.

Pathological Diagnoses.—The heart weighed 380 Gm. Examination showed coronary arteriosclerosis with old and recent occlusions and myocardial infarcts, organizing mural thrombi of the left ventricle, aneurysmal dilatation of the apex of left ventricle and severe, chronic, passive congestion of lungs, hyalinization of the island of Langerhans and severe, generalized arteriosclerosis.

COMMENT

All the cases were electrocardiographically characteristic of myocardial infarction. Cases 1, 3, 4 and 5 were characteristic of old anterior myocardial infarctions with superimposed small, fresh infarcts in cases 4 and 5, while case 2 represented a posterior myocardial infarct. More leads and electrocardiograms were available for study in the first case. The tracings of December 1945 and January 1946 were characteristic of an organizing infarction that was of anteroseptal location and was extending into the lateral wall of the left

ventricle. The tracings between 1947 and 1949 showed a fixed pattern and represented an old healed anteroseptal infarct. The abnormal Q-S complexes and elevated RS-T segment in leads V_2 and V_4 were compatible with an aneurysm of the apical portion of the anterior wall, but the RS-T displacement was not as great as has been observed by others.[13] In cases 4 and 5 there was definite elevation of the RS-T segment above normal limits in the precordial leads, but these observations may have resulted from the small fresh infarctions which were found. Because of its persistence four to five weeks after the clinical onset of the myocardial infarction, the elevation of the RS-T segment in case 5 is unusual in electrocardiographic evolution. It suggests persistence or recurrence of subepicardial injury or the establishment of a fixed pattern referable to aneurysm. There were insufficient tracings to differentiate clearly between these two possibilities; however, the increase of elevation of RS-T junction of lead V_2 from 3 mm. on July 5 to 4 mm. on July 8 and 5 mm. on July 12 was suggestive of an acute injury.

Case 3 showed an electrocardiogram characteristic of anteroseptal infarction extending into the lateral wall. The RS-T elevation was only 1 mm. in leads V_1 and V_3. Case 2 showed a tracing suggestive of posterior myocardial infarction. The abnormal slurring and notching in all leads was indicative of a conduction defect. The fact that the broad, notched and slurred R wave in leads V_4 and V_6 represented the initial deflection suggested an incomplete left bundle branch block as a cause of the defective conduction. Further exploratory leads over the left ventricle would have been desirable to establish or exclude this interpretation definitely. The findings in the standard leads pointed to posterior infarction, but studies of unipolar leads from the back, legs or esophagus would be necessary for confirmation.

Unipolar limb leads were available in cases 1 and 3, permitting comparison with Goldberger's observations on aV_R. In neither case were the results in agreement. Case 1 showed equiphasic R-S complexes, while in case 3 the aV_R was bizarre, small and of the qrsr' type. In this instance the position of the heart was horizontal.

Unequivocal persistent RS-T segment elevation in the precordial leads (fixed pattern) was present only in the first case. In case 3 slight RS-T elevation was considered to be within normal limits. In cases 4 and 5 superimposed additional factors may have been responsible for the RS-T elevation. Wilson,[14] Myers,[15] Rosenberg and Messinger [6] are the only authors who call attention to the RS-T segment elevation in the precordial leads in the presence of ventricular aneurysm. There is no adequate explanation of the persistent elevation of the RS-T segment many years after the development of the myocardial infarction, although Myers [15] states that "the abnormal RS-T segments and T waves probably represented cavity potentials transmitted through the aneurysm without modification when the wall was completely replaced by fibrous tissue or transmitted with slight alteration when it contained muscle remnants capable of activation and repolarization."

The RS-T displacement may be considered a result of the current of injury. Rosenbaum, Johnston and Alzamora [17] reported a case of metastatic invasion of the heart in which there was persistent elevation of the RS-T segment. They expressed the opinion that a continuous myocardial injury existed, caused by pressure, physicochemical action or interference with the blood supply. Bayley [18] considered that the term "injured muscle" implies an altered physiological rather than an altered structural change, capable of producing a current of injury. The current of injury of the subepicardial region facing the exploring electrode, or subendocardially in the opposite ventricular wall, perpendicularly, may cause the elevation of the RS-T segment in the precordial leads.[19] Contrariwise, RS-T depression in the precordial leads results from subendocardial injury under the exploring electrode or subepicardial injury of the opposite wall. The displacement is greater when the exploring electrode is nearer the injured area or is directly on a perpendicular line through the opposite ventricular wall. Shifting the exploring electrode so that it covers more of the intact muscle reduces the displacement until it becomes isoelectric. In cases of aneurysm of the posterior wall of the left ventricle displacement of the RS-T segment is to be expected. The injury of the subepicardial portion of the posterior wall produces changes in the precordial leads that are reciprocal to those caused by subepicardial injury of the anterior wall.[20]

Thus, a brief review of the literature reveals that the majority of authors do not believe that specific electrocardiographic patterns exist in cases of ventricular aneurysm. Most investigators agree that the electrocardiographic patterns can be explained on the basis of the antecedent myocardial infarction and the resulting myocardial changes. The electrocardiogram may be of value in disclosing a previous coronary accident and in locating the probable site of the ventricular aneurysm on either the anterior or the posterior aspect of the heart.[21] Multiple lead electrocardiograms have more chance of success with these differentiations.

The exact mechanism of the continuous injury in the presence of ventricular aneurysm is not clear and may be multiple: ischemia, hypertrophy or even strain may produce the effects noted. Perhaps, as Wilson has stated, "When RS-T displacement persists over a long period without any change in magnitude or form of the RS-T segment, it can hardly be the result of (nonpolarizable) boundaries . . .; it should be attributed to some other cause, such as overlapping of the QRS and T complexes. More or less permanent RS-T displacement does sometimes occur in myocardial infarction, but it can hardly have the same significance as the transient form, even when it cannot be easily

17. Rosenbaum, F. F.; Johnston, F. D., and Alzamora, V. V.: Persistent Displacement of the RS-T Segment in a Case of Metastatic Tumor of the Heart, Am. Heart J. **27**: 667, 1944.

18. Bayley, R. H.: On Certain Applications of Modern Electrocardiographic Theory to the Interpretation of Electrocardiograms Which Indicate Myocardial Disease, Am. Heart J. **26**: 769, 1943.

19. Nahum, H. L., and Hoff, E. H.: Nature of the Precordial Electrocardiogram, Am. J. Physiol. **155**: 215, 1948. Hellerstein, H. K., and Katz, L. N.: The Electrical Effects of Injury at Various Myocardial Locations, Am. Heart J. **36**: 184, 1948.

20. Wolferth, C. C.; Bellet, S.; Livezey, M. M., and Murphy, F. D.: Negative Displacement of the RS-T Segment in the Electrocardiogram and Its Relationships to Positive Displacement: An Experimental Study, Am. Heart J. **29**: 220, 1945.

21. Brams and Gropper.[2a] Fulton.[2c] Parkinson, Bedford and Thomson.[2a] Rowland.[7a]

distinguished from it by a single observation. It is associated with ventricular aneurysm more often than one might expect on the basis of what is known concerning the individual frequencies of the two phenomena. This probably only means that infarcts of the kind which produce the one are in some respects like those that lead to the other." [14]

CONCLUSIONS

1. Ventricular aneurysm is not an unusual complication of myocardial infarction.
2. The most common location of the aneurysmal dilatation of the heart is the left ventricle and especially the anterior wall in the apical region.
3. In four of the five cases reported there were aneurysms of the anteroapical region of the left ventricle.
4. The electrocardiogram is constantly abnormal with findings corroborative of myocardial infarction.
5. The persistent RS-T elevation in cases of anteroapical ventricular aneurysm may be found in the precordial leads.
6. The RS-T displacement may be the result of continuous myocardial injury of the subepicardial or subendocardial ventricular wall.
7. Multiple precordial leads are suggested in all cases as an aid in the diagnosis of ventricular aneurysms.

Skoufa 32, Athens, Greece (Dr. Pipilis).
6 North Michigan Avenue, Chicago (Dr. Wosika).

THE CORNELL MEDICAL INDEX-HEALTH QUESTIONNAIRE

II. AS A DIAGNOSTIC INSTRUMENT

Keeve Brodman, M.D.
Albert J. Erdmann Jr., M.D.
Irving Lorge, Ph.D.
and
Harold G. Wolff, M.D.
With the technical assistance of
Todd H. Broadbent, New York

The Cornell Medical Index-Health Questionnaire is a self-administered instrument that collects a large body of significant medical and psychiatric data without the physician's participation, so that the physician may have available, even before he interviews the patient, information on which to base tentative diagnostic appraisals of the patient's total medical problem. This communication reports the accuracy and completeness of the diagnostic appraisals that can be made with the data on the Cornell Medical Index.

From the New York Hospital and the Departments of Medicine (Neurology) and Psychiatry, Cornell University Medical College, and Teachers College, Columbia University.

The work described in this paper was done under a contract, recommended by the National Research Council, between the Veterans Administration and Cornell University.

Copies of the Cornell Medical Index-Health Questionnaire may be obtained from the authors, the New York Hospital, 525 East 68th Street, New York 21, N. Y.

1. Brodman, K.; Erdmann, A. J., Jr.; Lorge, I., and Wolff, H. G.: The Cornell Medical Index: An Adjunct to Medical Interview, J. A. M. A. 140: 530-534 (June 11) 1949.

DESCRIPTION OF THE CORNELL MEDICAL INDEX

The Cornell Medical Index-Health Questionnaire (C. M. I.) is a four-page, letter-size sheet on which are printed 195 questions corresponding closely to those usually asked in a detailed and comprehensive medical interview.[1] Many questions on the psychological aspects of medical disorders are included. Questions are in informal language and worded to be understood by persons with a reading knowledge of simple English. Technical terms are avoided, but when their use is necessary an explanation is given. Thus, diabetes is explained as "sugar disease," urinate as "passing water," and varicose veins as "swollen veins." After each question a "Yes" and a "No" appear; the patient answers the questions by circling one. In every instance a "Yes" response indicates that the patient does have the symptom about which he is being questioned.

In constructing the form, items were selected only after a pilot study of more than 1,000 subjects had shown that the items collected data accurately. The items are of four kinds: those relating to bodily symptoms (for example, "Do you usually feel bloated after eating?"); those relating to past illnesses ("Has a doctor ever said you had kidney or bladder disease?"); those relating to family history ("Did anyone in your family ever have a nervous break-down?"), and those relating to behavior ("Do you often feel unhappy and depressed?").

The questions are arranged in 18 sections headed by letters of the alphabet, questions in each section being related. There are two forms of the C. M. I., one for men and the other for women. Both are identical except for six questions in the genitourinary section. The C. M. I. is headed: Cornell Medical Index, Health Questionnaire. The term health questionnaire explains the nature of the form to the patient and has been shown by test to reduce the patient's suspicion about the purpose of the questions.

The test is administered simply by handing the form to the patient and asking him to complete it. It can be administered to patients either individually or in groups, the only additional equipment necessary being a pencil or pen and a table or board on which to rest the form. The New York Hospital outpatient department uses a pressed paper board, 10 by 12 inches (25 by 30 cm.), which the patient rests on his knees. Patients usually take 10 to 20 minutes to complete the form. A previous investigation [1] showed that the Cornell Medical Index collects most of the historical data recorded by physicians in the charts of patients in the general medical outpatient department of the New York Hospital and, in addition, a large body of other important medical data. All these data are collected as accurately as in oral interview.

THE SAMPLE STUDIED AND THE METHODS

Experiments were designed to determine the usefulness of the Cornell Medical Index in planning the diagnostic investigation of the patient, that is, to determine how accurately the physician, on the basis of the data on the form, can select certain diagnostic areas, the investigation of which will reveal the patient's diseases.

In the summer of 1949, one hundred and ninety-one forms were chosen at random from those completed, during the period April 1948 to March 1949, by patients in the outpatient

admitting department of the New York Hospital who were assigned to the General Medical Department. This is a teaching clinic for fourth year students at Cornell University Medical College. These completed forms, without the supplementary sheets (on which the patients are told to "Write all the troubles for which you come to the hospital") [1] were examined by a practitioner (A. J. E.) associated with this investigation, referred to below as practitioner 1. Later, these same data

TABLE 1.—*Diagnostic Areas*

1	Eyes	11	Hemorrhoids	22	Anemia
2	Ears	12	Musculoskeletal	23	Syphilis
3	Respiratory	13	Skin	24	Diabetes
4	Respiratory allergies	14	Neurological	25	Goiter
5	Tuberculosis	15	Male genitalia	26	Tumor or cancer
6	Hypertension	16	Hernia	27	Weight
7	Cardiac	17	Menstrual	28	Varicose veins
8	Vascular	18	Urinary	29	Operations
9	Teeth	19	Scarlet fever	30	Injuries
10	Gastrointestinal, gallbladder, liver	20	Rheumatic fever	31	Emotions
		21	Malaria		

were examined independently by three other practitioners, two interns, a medical technician and a nurse, none of whom were associated with this investigation or had previously used the Cornell Medical Index. Each made blind diagnostic interpretations of the data on the forms. On the sole basis of the replies given, no other information about the patient being available, they recorded in which of 31 diagnostic areas (table 1) they believed medical investigation of each patient would reveal evidences of disease. These diagnostic areas are those usually investigated in comprehensive medical examinations, that is, organ systems or a history of disease. In addition, they recorded the specific disease that they believed would be discovered in each of these diagnostic areas.

After interpretations of the data on the forms had been completed, the hospital charts of the patients were examined. At no time had the hospital physician examining the patients seen their Cornell Medical Indexes. Lists were made from each patient's hospital chart of the disease identified and of the diagnostic areas whose investigation resulted in the identification of the diseases. The diseases identified in the hospital were listed from the physicians' impressions of the patients' diseases (about one third of all the diseases listed) or taken from the physicians' records of the patients' medical histories and physical examinations.

Finally, the diagnostic areas selected for investigation by the physicians interpreting the C. M. I. were compared with the diagnostic areas in which disease was identified in the hospital investigation.

RESULTS

The comparison of diagnostic areas was tabulated in four categories: (*A*) areas in which disease was identified both in the hospital and with the Cornell Medical Index; (*B*) areas in which disease was identified only in the hospital, and overlooked with the C. M. I.; (*C*) areas in which disease was indentified with the index data but in which no disease was found in hospital investigation, and (*D*) areas in which disease was identified only with the completed form, and which had not been adequately investigated in the hospital.

This tabulation is shown in table 2. Solely by interpreting the data on the forms, practitioner 1 correctly identified an average of 5.9 per patient of the areas in which disease was found in the hospital (column *A*). He overlooked an average of only 0.4 areas (column *B*), that is, only 6 per cent of all the areas in which disease was found in the hospital.

He selected these 5.9 areas at the cost of only 0.3 areas per patient (column *C*) in which no evidence of disease was found in hospital investigation. Not all of these 0.3 areas were "false positives." In some instances the patient once had the disease but now, after adequate treatment, was free of it. Examples are anemia and syphilis. In other instances the hospital physicians, finding no structural disorder and without considering the possibility of a dysfunction associated with a psychological disturbance, had recorded that no disease was present.

Finally, practitioner 1 selected for investigation an average of 2.8 areas per patient that were not adequately investigated in the hospital (column *D*). Information whether disease was or was not present is not available. These areas must be considered as areas of possible disease overlooked in the hospital investigation.

That these areas were properly selected by practitioner 1 was confirmed by recalling some patients for reexamination. Of 28 patients recalled, 16 returned. Two of these, who came to the United States only recently, were found to have severe language difficulties. Their answers on the Cornell Medical Index, and consequently the interpretations of the physician examining the data, were inaccurate. Excluding these two patients, of 54 areas in column *D*, evidence of disease was discovered in 50. Selection by practitioner 1 of the areas tabulated in column D therefore appears to have been generally correct.

Most frequently overlooked in the hospital (column *D*) were emotional disorders and their somatic manifestations. Thus, the data of 139 of the 191 patients were interpreted as showing evidence of some emotional disturbance, yet the hospital record showed no evidence that the psychological aspects had been investigated in 53. Nineteen of these patients were recalled and nine returned. Reexamination by a psychiatrist not associated with this investigation confirmed the impression that an emotional disturbance existed in all nine patients.

TABLE 2.—*Comparison of the Average Number of Diagnostic Areas per Patient in Which Diseases Were Identified in Hospital Investigation and with the Cornell Medical Index*

	A Diagnostic Areas Identified Both in the Hospital and with the C.M.I.	B Diagnostic Areas Identified Only in the Hospital	C Diagnostic Areas Identified with the C.M.I., No Disease Found in the Hospital	D Diagnostic Areas Identified Only with the C.M.I.
Practitioner 1	5.9	0.4	0.5	2.8
Practitioner 2	5.5	0.4	0.3	2.9
Practitioner 3	5.4	0.4	0.3	3.2
Practitioner 4	5.8	0.4	0.3	4.0
Intern 1	5.5	0.4	0.3	3.0
Intern 2	5.1	0.5	0.3	3.1
Average, all physicians	5.6	0.4	0.3	3.2
Nurse	5.4	0.4	0.3	2.9
Technician	5.5	0.5	0.3	3.0

Other physicians interpreting the C. M. I. did so as effectively as practitioner 1 (table 2). The interns did about as well as the practitioners. With the data on the form even the medical technician and the nurse were able to select almost all the areas in which disease was found in the hospital, overlooking most frequently evidences of emotional disorders.

Patients in the general medical outpatient department manifested many disorders, like myopia, constipation, hemorrhoids or obesity, of a relatively minor nature. Other disorders, like hypertensive heart disease or peptic ulcer, were of greater medical importance. It is desirable to ascertain the diagnostic usefulness of the Cornell Medical Index in detection of these potentially more serious disorders. A tabulation was made, similar to the one described above, but this time only of more serious disorders (table 3). This table is similar to table 2, but column *C* does not appear because a disease cannot be considered important if adequate hospital investigation revealed no evidence of the disease.

Solely by interpreting the C. M. I., practitioner 1 correctly selected for investigation an average of 1.3 areas per patient in which disease was found in the hospital (column *A*). He overlooked only 0.1 areas per patient (column *B*), or 7 per cent of all the areas in which medically important diseases were found in the hospital. In addition, he selected for investigation

TABLE 3.—*Comparison of the Average Number of Diagnostic Areas per Patient in Which Major Diseases Were Identified in Hospital Investigation and with the Cornell Medical Index*

	A Diagnostic Areas Identified Both in the Hospital and with the C.M.I.	B Diagnostic Areas Identified Only in the Hospital	D Diagnostic Areas Identified Only with the C.M.I.
Practitioner 1	1.3	0.1	0.2
Practitioner 2	1.3	0.1	0.2
Practitioner 3	1.3	0.1	0.1
Practitioner 4	1.3	0.1	0.2
Intern 1	1.3	0.2	0.2
Intern 2	1.3	0.2	0.2
Average, all physicians	1.3	0.1	0.2
Nurse	1.3	0.2	0.1
Technician	1.2	0.2	0.1

one area in every seven patients in which review of the patient's C. M. I. and of the hospital charts indicated that a potentially serious disorder was probably overlooked in hospital investigation (column *D*). In all except one instance, the disorder overlooked was an emotional disorder. These failures were considered to be important because, without knowledge of the emotional disorder, it was not possible to understand fully the patient's somatic complaints.

The areas in which potentially more serious disorders were found in the hospital were selected by other physicians as accurately as by practitioner 1. The medical technician and the nurse were not as accurate as the physicians.

Practitioner 1 selected for investigation 93 per cent of the areas in which potentially serious disease was discovered in the hospital, and, more specifically, in 87 per cent of the areas that he had selected he even indicated what diseases would be discovered. Other physicians interpreting the data suggested the diseases with comparable accuracy. The medical technician and nurse, however, could seldom name the disease that was found. It is to be expected that the diagnostic interpretations by medical assistants will be less precise than those of physicians.

In addition to the 191 Cornell Medical Indexes described above, another 50 were examined, this time using the supplementary sheet as well. Unlike the basic form, the supplementary sheet indicates the chief complaint, an important item of medical data. By use of the data on the supplementary sheet it was possible for the physicians to make diagnostic interpretations of the information more rapidly, although not always more accurately, than with the basic form alone.

The chief complaint shown on the supplementary sheet is especially important in the interpretation of the C. M. I. of patients in outpatient departments other than the general medical. The reason the patient seeks medical advice from specialists is seldom found on the Cornell Medical Index. The form does, however, contain information on other aspects of these patients' total medical problem.

TECHNIC OF USING THE CORNELL MEDICAL INDEX

The most effective method of using the Cornell Medical Index-Health Questionnaire is for the patient to complete it, and for the physician to review it, before medical interview is started. The physician then has available a large body of significant medical data to assist him in interview and on which to base tentative diagnostic interpretations. Except when inaccurate answers on the form are suspected, only questions answered "Yes" need be elaborated. To complete the interview the physician elicits the chief complaint, the details of the present illness, and other data not on the form, such as the quantitative relation of the menstrual cycle.

In interpretation of the data, the heading is examined first, giving the patient's sex, age, marital status, education and occupation. Next, the entire form is examined for determination of whether there are few or many "Yes" answers. With many "Yes" answers (more than 25) a severe disorder is to be suspected. The distribution of the "Yes" answers is then noted. If the "Yesses" are chiefly in one or two sections of the form, the patient's medical problem generally is localized; if "Yesses" are scattered throughout the four pages of the C. M. I., the medical problem is likely to be diffuse, often including an emotional disturbance. In relation to the patient's emotional status, "Yes" answers on the last page are important. Here are questions about the patient's attitudes and behavior. More than two or three "Yes" answers on the last page usually indicate some degree of psychological disturbance. Finally, the most important examination of the index data is made. The specific questions answered "Yes" are noted. This defines the symptomatology of the patient's illness.

No rules can be given here on the method of interpreting the patient's complaints in the Cornell Medical Index. Diagnostic interpretations of medical data must be based on the physician's own training, knowledge, experiences and insight. The physician himself must judge, for example, whether a "Yes" answer indicates a structural disease or a functional disorder without gross organic defect. However, as shown above, the data are so pertinent and so comprehensive that a physician, even with minimal medical experience, can

make valid diagnostic interpretations of the information on the form.

Diagnostic interpretations are made rapidly, because the data can be read easily, being printed and not written out in often undecipherable longhand, and because symptoms ("Yes" answers) stand out conspicuously.

REPORT OF CASES

These case histories illustrate the value of the Cornell Medical Index in making diagnostic appraisals of the patient's total medical problem. The C. M. I.'s of the patients described here were not available to the hospital physicians.

Psychological Aspects of the Patient's Disorder Neglected.—J. K., a man aged 46, a married taxicab driver with one year of high school education, came to the outpatient department complaining of "not feeling well in general." In four visits to the hospital diagnoses were made of obesity, flat feet, contracture of the calves, Morton's toe on the left, male climacteric and migraine. None of these diagnoses explained the patient's chief complaint of not feeling well in general. The psychological aspects of the patient's illness were not investigated.

On the Cornell Medical Index, completed on the first day of the patient's hospital attendance, were 71 "Yes" answers. Forty-six specified various body complaints and 25 referred to his behavior and attitudes. These included such complaints as being constantly keyed up and jittery, being considered a nervous person, worrying constantly, being unhappy and depressed, often crying, life looking entirely hopeless, having frightening thoughts coming back to his mind, and often wishing he were dead and away from it all. Each of the physicians examining the patient's C. M. I. believed that he had a severe emotional disorder. The medical technician and nurse made the same interpretation.

The hospital physicians, however, did not recognize that the patient was emotionally disturbed. This was discovered almost accidentally when, on the forty-first day of the patient's hospital attendance, he was referred to the Neurology Clinic for an opinion about his migraine. There, a neurologist interested in the psychological aspects of medical problems investigated the patient's emotions. He noted that the patient had a rigid personality, felt frustrated, was depressed and expressed suicidal urges. He elaborated the psychological aspects of the patient's complaints, including the chief complaint. The neurologists's formulation was: "This patient's headaches appear to be vascular in origin, and to be associated with an inability to accept his life situations."

Thus, not until the forty-first day of hospital attendance did a physician finally investigate the emotional disturbance that explained the patient's complaints. His emotional disorder had been noted by the physicians and medical assistants examining the Cornell Medical Index. Had it been available to the physicians in the General Medical Department, the patient's emotional disturbance and its relation to his somatic complaints might have been understood immediately, instead of only after six weeks of hospital attendance.

Only One Aspect of the Total Medical Problem Investigated.—V. W., a woman aged 31, a married housewife with three years of high school education, came to the outpatient department complaining of a cough for 1½ years. The cough was found to be due to laryngitis. An incidental finding on physical examination was a large uterus. Since this seemed more serious than her laryngitis, the hospital investigation thereafter considered only her gynecologic condition. She proved to be four months pregnant. Other aspects of the patient's total medical problem were ignored.

On the form completed on her first hospital visit, the patient had indicated only a few "Yes" answers, of which eight were gastrointestinal complaints. All the physicians and medical assistants interpreting her C. M. I. believed that this indicated a gastrointestinal disorder. Three physicians surmised this disorder to be cholecystitis. The hospital physicians, however, paying attention only to the pregnancy, did not learn of her gastrointestinal complaints. Three months after spontaneous delivery, she returned to the hospital with these complaints which, she claimed, had been present for over a year. The complaints included gaseous eructations, right upper quadrant abdominal pains, nausea and vomiting. Laboratory investigation revealed that the patient had cholecystitis with hydrops.

This disorder had been overlooked because the hospital physicians neglected to investigate aspects of the patient's total medical problem other than her pregnancy. The unrecognized cholecystitis was potentially a serious complication of pregnancy. Had the C. M. I. been available to the hospital physicians, the patient's gastrointestinal complaints could have been recognized and the physicians would have been prepared to deal with this disorder immediately should it have become active.

Cardiac Symptoms Related to an Emotional Disorder in a Patient with Hypertension.—R. H., a woman aged 54, a married housewife with seven years of elementary school education, came to the hospital complaining of three attacks of palpitation in the past year. Other cardiac symptoms were tachycardia, dizziness and catching of the breath.

In the Cornell Medical Index the patient indicated 26 "Yes" responses, of which eight indicated some disturbances of attitudes and behavior. These latter included complaints that sudden noises made her shake badly, that she is extremely sensitive and that she is considered a nervous person. This last complaint has been found to be a common symptom of a psychological disturbance. Physicians examining the C. M. I. believed that the patient had an emotional disorder and that her cardiac symptoms might be more closely related to this than to her known hypertension.

In the hospital, however, the emotional aspects of her disorder were not elaborated, and the only diagnoses were essential hypertension and cardiac disease of unknown causation. Her cardiac symptoms were believed to be due to hypertention. This opinion was not modified, even though a chest roentgenogram showed no evidence of cardiac enlargement and an electrocardiogram revealed only moderate left axis deviation.

Because the interpretation of the patient's symptoms by the hospital physicians and by those interpreting the C. M. I. were different, the patient was recalled for reexamination. The physician making the reexamination found that her cardiac symptoms came on almost solely when she was tense or anxious. She reported a dream: "A strange man, tall and thin, and a short fat woman, came into my house and asked if they could boil up some coffee. I started running downstairs. I woke up all out of breath and with my heart beating fast." In view of the information discovered in reexamination, the physician concluded that the cardiac symptoms were more closely related to her emotional disturbance than to her moderate hypertension without evidence of structural cardiac disease.

She was referred for psychiatric evaluation. The psychiatrist further elaborated the relation of her cardiac attacks to her emotions. He noted that she was apprehensive about her heart and blood pressure, and about medication. His recorded impression was: "Anxiety reaction seems very important in this patient."

It is interesting that the admitting intern, who had accidentally seen the patient's health questionnaire, had noted, "Spells of rapid heart rate three times this year, accompanied by shaking. The patient considers herself very nervous, has been told that she has high blood pressure. Many symptoms of *anxiety* (italics his). The Cornell Medical Index answers are compatible with this." Unfortunately, this note appears to have been overlooked by other hospital physicians, and the patient's emotional disorder was not recognized. Had the C. M. I. been available to the examining physicians, they too might have suspected that the patient's symptoms were related to her emotional disorder.

Diagnostic Inferences Drawn from Interpretation of the Index Data Similar to Those from Examination of the Patient.—A. D., a married man aged 63, an auditor, sought medical advice for increasing redness of the toes on both his feet for the past five months. After extensive examinations and laboratory

investigations by the hospital physicians the following diagnoses were made: (1) hypertension; (2) arteriosclerotic heart disease; (3) diabetes mellitus; (4) cataracts bilaterally, and (5) benign prostatic hypertrophy.

In the Cornell Medical Index the patient had indicated 18 "Yes" responses, of which three referred to hypertension, one to diabetes, two to his eyes and three to his genitourinary system. Each of the six physicians interpreting the data with no additional information about the patient, made the following diagnoses: (1) hypertension; (2) hypertensive cardiovascular disease (four believed he had arteriosclerotic heart disease in addition); (3) diabetes mellitus; (4) a refractive error, and (5) benign prostatic hypertrophy (one physician used the term "prostatism").

The diagnostic interpretations of the C. M. I. by the medical assistants were similar, though not as precise as those of the physicians. Thus, the medical technician diagnosed hypertension, a heart disease she could not designate, diabetes, a refractive error, and a prostatic disease she did not name. The nurse made diagnoses of hypertension, a heart disease that was possibly congenital, diabetes, a refractive error, and an enlarged prostate.

This case illustrates that diagnoses made by one physician interpreting the C. M. I. can be reproduced by others, and that their diagnoses closely approximate those made by hospital physicians examining the patient.

Symptoms Associated with an Emotional Disorder Interpreted as Due to a Structural Disease.—W. E., a man aged 44, a married United States customs officer with eight years of elementary school education, came to the outpatient department with a chief complaint of chest pains and shortness of breath for 11 years.

In the health questionnaire, completed at his first visit to the hospital, he circled 52 "Yes" answers, of which 47 were complaints about his body. The diffuse character of his complaints was striking. He indicated two complaints referring to his eyes, five to his respiratory system, six to his cardiac system, five to his gastrointestinal tract, six to his musculoskeletal system, two to his skin, seven to headaches and his neurological system, two to his genitourinary system and 12 other scattered somatic complaints. Each of the physicians and medical assistants examining the C. M. I., unable to explain complaints about so many organ systems on the basis of a structural disease, interpreted them as being somatic manifestations of an emotional disorder. They all believed, however, that the possibility of an organic heart disease must be ruled out.

In the hospital, the multiplicity and diffuse nature of the patient's complaints were unrecognized. Since he volunteered complaints only about his heart, only his cardiac system was investigated. The examining physician diagnosed his disorder as coronary artery disease with coronary insufficiency.

Laboratory observations did not confirm this diagnosis. However, seven days after the patient's first visit, the physician recorded in the chart, "Impression—in spite of the exercise tolerance result, I believe this patient has an anginal pain, the etiological basis of which is not clear."

The patient continued to complain of chest pains and shortness of breath. After 24 days of hospital attendance, unable to demonstrate a coronary disease, the physician sought for another explanation of the patient's chest pains. He recorded on the chart, "Impression—probable anginal syndrome. The constant pain possibly is due to gas."

By the thirty-eighth day of hospital attendance, still not able to demonstrate any structural disorder, the physician now suspected an association of the cardiac complaints with an emotional disorder. However, when he failed to elicit information that confirmed the suspicion, he abandoned this line of thought. His note read, "Impression—still suspect coronary artery disease. There may be overreaction here, but cannot elicit an emotional basis." Another electrocardiogram was ordered, and a roentgenogram of the dorsal portion of the spine, both of which were reported to show essentially normal conditions.

On the fiftieth day after his initial visit to the hospital, the patient complained of severe headaches. The hospital physician did not relate the headaches and the chest pains. Attempting to explain the headaches as another somatic disorder, he noted, "Impression—the present chief complaint of headaches may be on the basis of a sinusitis."

On the seventy-first day the multiplicity of the patient's complaints increased. The hospital physician still sought to explain new complaints on the basis of structural disorders. His note read, "Headaches and giddiness now the chief complaint. Impression—this patient puzzles me. I believe he has angina pectoris, and that he has developed a great fear of heart disease. He seems tense, anxious and extremely fearful at times. I suspect that the headaches and weak spells are on a psychogenic basis. Axillary pain not explained—possibly a diaphragmatic source on the basis of gastrointestinal dysfunction and cardiac disease. I believe a gallbladder series and possibly a gastrointestinal series should be checked. Then perhaps a psychiatric consultation." Apparently, the hospital physician was unwilling to make a diagnosis of an emotional disorder before the possibility of all structural disorders had been eliminated.

On the seventy-eighth day a gallbladder series and on the eighty-eighth day another complete blood count and sedimentation rate were reported to be within normal limits. Because of complaints of teeth pains, on the ninety-first day the patient was sent to the dental department, where dental caries was diagnosed and a molar tooth extracted.

By the one hundred and sixteenth day all attempts to demonstrate gross structural disorders to account for the patient's many complaints had failed. The conclusion became inescapable that the patient had an emotional disorder. Having arrived at this conclusion, the physician apparently lost interest in the patient. He wrote, "I believe this man is a hypochondriac. Discharge from the General Medical Department."

But discharging the patient did not cure his symptoms. He returned with the same complaints on the one hundred and eighty-fifth day to the Emergency Clinic and on the one hundred and ninety-second day again to the General Medical Department. At that time the hospital physician finally recorded the diagnosis made by the physicians and the medical assistants examining the patient's Cornell Medical Index. He wrote, "Impression—anxiety state with somatic manifestations." The patient was then referred to the psychiatrist.

The psychiatrist's note on the two hundred and third day of attendance in the outpatient department read, "The patient to be admitted as an inpatient for brief psychiatric study. He is very tense and has many physical complaints. It seems likely that many of his complaints may be on the basis of anxiety and emotional conflicts that he is trying to keep out of awareness."

Thus, more than six months elapsed before the emotional aspects of the patient's complaints were understood. Actually, the diagnosis of an emotional disorder was first made in the hospital by exclusion and not on the basis of positive data. Had the Cornell Medical Index been available, with all the data indicating an emotional disorder, it would have been possible to suspect this diagnosis on the first day of the patient's hospital attendance. Examinations of the patient could then have been made to rule out the possibility of a concomitant structural disorder and the patient referred to the psychiatrist immediately. As it was, this took six months of hospital attendance. The delay resulted not only in distress to the patient but also in high cost to the hospital and expenditure of the physicians' time and energy searching for a nonexistent structural disorder.

COMMENT

The Cornell Medical Index collects and records a large array of facts about the patient's total medical problem. When interpreted by a physician with even minimal medical experience it makes possible correct and comprehensive diagnostic deductions in one to three minutes. With the index, the physician can make a rapid and systematic review of the patient's total medical problem.

Broad diagnostic deductions may be made with the data about most aspects of the patient's total medical problem. The C. M. I. furnishes over-all diagnostic information about organ systems in which manifestations of disease may be present and about the past and family history of many specific diseases. Especially, the C. M. I. contains information about the psychological aspects of the patient's disorder, an area frequently neglected in routine clinic investigations.

Although the Cornell Medical Index draws attention to areas in which the patient may have disease manifestations, these areas must be investigated for determination of what specific disease is present. Tentative diagnoses made with the C. M. I. should be confirmed. The form is most useful when employed as a part of a comprehensive medical investigation. Since most of the information in the health questionnaire is about the patient's symptoms, disorders that are asymptomatic, such as early cancer, are seldom detected. Most patients find completing the form a satisfying task while waiting to see the physician. The questions are worded in informal and nontechnical language. When examining the sheet, the physician translates this language into technical terms, for example, "Does your heart often race like mad?" into tachycardia. To use the Cornell Medical Index most effectively, the physician must accustom himself to its informal language and to using all the information it contains. It has been found useful in the following situations:

1. In private and hospital practice as a part of the initial general medical examination and a basis for investigative procedures, so that important manifestations of disease will not be overlooked.

2. In specialty outpatient departments to obtain a background of information about the patient's total medical problem, to aid in interpretation of the manifestations of disease in the specialty and referral of the patient to appropriate clinics for investigation of other manifestations of disease.

3. In industrial medical departments to save the physician's time, and for the two reasons listed above.

4. In admission clinics to enable the physician in minimal time to assign patients to the appropriate physicians.

5. In insurance work to evaluate the medical status of applicants for insurance on the basis of comprehensive and voluminous information.

6. In clinical psychology to obtain information (*a*) about the patient's body, so that the psychologist may suspect the presence of somatic disorders and (*b*) about his emotions as leads in psychological interview.

7. In medical teaching to supply the students with a large body of significant medical information about each patient that is easy to review and not buried in a mass of negative information.

8. In research for study the incidence of symptoms in various medical disorders and to make large scale public health surveys. The fact that nurses can make valid partial interpretations of data on the Cornell Medical Index promises to be particularly useful.

SUMMARY

The Cornell Medical Index, a self-administered questionnaire, collects a large body of significant medical and psychiatric data about the patient for diagnostic interpretation. It does not make automatic diagnoses. When data were interpreted by physicians in a teaching hospital the form yielded correct and comprehensive diagnostic deductions in one to three minutes. Physicians were able to identify almost all (94 per cent) of the diagnostic categories in which disease was found on investigation in a university teaching general medical outpatient department. In addition, they could often infer (in 87 per cent of these areas) what specific medical diseases were present.

With the Cornell Medical Index the physicians identified many evidences of disease overlooked in hospital investigation. This was especially true of the psychological aspects of disease. No special medical training or previous experience with the form was needed for effective interpretation of the data. Interns interpreted the information almost as accurately as did physicians with longer medical experience. Even medical assistants, such as a registered nurse and a medical technician, could identify most of the areas in which disease was found in hospital investigation, although they could seldom correctly name the specific diseases.

The Cornell Medical Index has been found useful in private and hospital practice as part of the initial general medical examination, in specialty outpatient departments, in admission clinics, in industrial medical departments, in insurance work, in clinical psychology, in teaching medical students and in medical research.

CLINICAL NOTES

CALCULI IN A DILATED STUMP OF THE CYSTIC DUCT, PREOPERATIVE VISUALIZATION

Michael Weingarten, M.D., New York

In 1936, H. L. Beye,[1] in a discussion of the conditions necessitating surgery after cholecsytectomy, reported on a group of 14 patients who were found to have a dilated cystic duct stump. The pouch thus formed varied from 1 to 2½ inches (2.5 to 6.4 cm.) in length and was of an average caliber of the little finger. Four of the patients had stones within the dilated stump of the cystic duct. All had had painful seizures which were either identical with or very similar to those experienced prior to cholecystectomy. Beye emphasized the necessity for careful probing of the stump of the cystic duct through the incised common duct in order to discover this condition, which he called a "reformed gall bladder." In 1946, Peterson [2] reported on 42 patients who after cholecystectomy were found to have a pouch consisting of a portion or all of the cystic duct and in some instances a portion of the gallbladder also. He considered the term "reformed gall-

From Beth Israel Hospital.

1. Beye, H. L.: Conditions Necessitating Surgery Following Cholecystectomy: Analysis of 66 Cases and Discussion of Certain Technical Problems Concerned in Removal of Gall Bladder and in Operations upon Common Bile Duct, Surg., Gynec. & Obst. **62**: 191-202, 1936.

2. Peterson, F. R.: Re-Formed Gall Bladder: Review of 42 Cases, J. Iowa M. Soc. **36**: 134-138, 1946.

bladder" to be a misnomer and concluded that the pouch was actually due to a dilatation of the cystic duct stump, the result of an incomplete cholecystectomy, during which a portion or all of a diseased cystic duct stump was left behind. Sections made from this newly formed receptacle for bile had all the appearances of sections taken from ordinary diseased gallbladders. The dilated cystic duct stump assumed a shape like that of a normal gallbladder but, except in rare instances, was much smaller.[3] It contained mucosa like that of the cystic duct, with, in some cases, mucosa in the fundus suggestive of gallbladder origin. Its wall showed inflammatory signs. Its lumen often contained stones. On histological examination, the excised structures were reported as showing chronic "cholecystitis."

Additional cases in which postcholecystectomy symptoms were due to inflammation and dilatation of a stump of the cystic duct are presented by Hicken and co-workers,[4] Gray and Sharpe,[5] Miller[6] and Grimes.[7] The last-named author had one patient in whom a stone within the dilated stump of the cystic duct was radiopaque and cast a positive shadow. Bockus[8] cites a case of Rothman, in which 12 months after cholecystectomy there was roentgenographic evidence of a regenerated gallbladder "which concentrated and stored bile like a normal gall bladder."

The following case is reported because of the rather unusual preoperative demonstration of nonopaque calculi within a dilated stump of the cystic duct 14 years after a cholecystectomy.

REPORT OF A CASE

B. A., a 63 year old married white woman, was first seen on Feb. 19, 1944. She stated that from 1917 to 1920 she had had several attacks each year of severe pain in the right upper abdominal quadrant radiating to the right scapular region, with nausea and vomiting. There was no jaundice. She had another painful seizure in 1929 and again in May 1932, when the pain was rather persistent but of varying intensity for three weeks. She entered a hospital in another city, at which time tenderness was noted over the gallbladder region and a soft mass descended beneath the right costal margin on deep palpation. She underwent cholecystectomy on May 28, 1932. The gallbladder was thick, inflamed and full of stones. It was amputated at the cystic dust, and the common duct was drained. She was discharged in 17 days.

She was well until the summer of 1943, when she drank considerable amounts of mineral water at a spa. Thereafter she began to experience epigastric distention after meals, with mild distress which at times radiated to the right upper quadrant. There was a decrease in appetite and slight loss of weight.

On examination, the patient was well nourished. The blood pressure, heart and lungs were normal. There was a healed cholecystectomy scar. There was no abdominal tenderness or rigidity, and no masses or viscera were palpable. Rectal digital examination disclosed no abnormality.

The blood cell count and results of urinalysis were normal. Gastric analysis revealed the presence of free hydrochloric acid. Stools were negative for occult blood. Findings on gastrointestinal roentgenograms were normal.

The patient was advised to have a duodenal drainage, but her symptoms abated after the roentgenogram study, and she did not return for examination until March 19, 1946, when she stated that for a few months she had been having attacks of pain in the right upper quadrant similar to those she had experienced prior to the cholecystectomy in 1932. Duodenal drainage was performed. Many cholesterol crystals were seen in the golden yellow bile which was obtained.

A flat roentgenogram of the right upper quadrant showed calcification of the costal cartilages but no opaque calculi. Routine cholecystography with iodoalphionic acid (priodax®) was then done. A small, round, dye-filled structure, which was about 2 cm. in diameter, was seen. In the center of this was a negative shadow about 1 cm. in diameter. One hour after a fatty meal, the structure was no longer seen. The examination was repeated a week later, with the same result. A diagnosis of calculus in a dilated stump of the cystic duct was made.

The patient was admitted to Beth Israel Hospital on May 14, 1946. The serum bilirubin was normal. A laparotomy was performed. There were many adhesions about the cystic duct stump. When these were dissected away, a saccular structure about 3 cm. in length and 2.5 cm. in diameter containing several stones was found. The cystic duct was ligated close to its junction with the common duct and the saccular structure removed. The common duct was not dilated; no stones were palpated within its lumen, and it was not drained.

The pathologist reported the presence of a saccular structure 4 cm. long and 2 cm. in greatest diameter. There were numerous adhesions to the serosal surface. When the specimen was opened, a mucosal surface was found. The lumen was incompletely divided into two portions by a ridge of tissue. In the lumen were two concretions, one roughly spherical and the other discoid. On microscopic examination lymphocytes were seen in the submucosa and in the muscular coat. Some glandular structures were seen deep in the wall. The diagnosis was chronic "cholecystitis" and cholelithiasis.

The postoperative course was complicated by pulmonary atelectasis of the lower lobe of the right lung, but the patient recovered and was discharged from the hospital three weeks after admission. She has remained symptom free.

COMMENT

Much stress has been laid on the need for care in cholecystectomy to avoid injury to the common and hepatic ducts. An increasing number of reports of cases in which an inflamed or dilated stump of the cystic duct produces symptoms similar to those experienced prior to cholecystectomy indicates that it is equally important that all but a small remnant of the cystic duct be resected. The cystic duct in man is 31 to 37 mm. long.

The mechanism of dilation of the cystic duct stump in man is not known. In dogs, Oddi[9] demonstrated that after cholecystectomy there is dilation of the common, hepatic and cystic ducts. Hartman, Smyth and Wood[10] showed that in dogs the cystic duct stump will dilate if it is 6 mm. or more in length. However, in man, cases have been reported in which there was a dilated stump of the cystic duct without any dilatation of the common duct. In such cases the assumption that back pressure is responsible

3. Peterson, F. R.: Re-Formed Gall Bladder, Tr. West. S. A. **51**: 203-220, 1941.

4. Hicken, N. F.; White, L. B., and Coray, Q. B.: Incomplete Removal of Cystic Duct as a Factor in Producing Post-Cholecystectomy Complications, Surgery **21**: 309-320, 1947.

5. Gray, H. K., and Sharpe, W. S.: Biliary Dyskinesia: The Role Played by a Remnant of the Cystic Duct, Proc. Staff Meet., Mayo Clin. **19**: 164-168, 1944.

6. Miller, G. H.: The Reformed Gall Bladder, J. Oklahoma M. A. **38**: 1-3, 1945.

7. Grimes, A. E.: Residual Stones in Cystic Duct Following Cholecystectomy, South. Surgeon **14**: 289-293, 1948.

8. Bockus, H. L., and others: Gastro-Enterology, Philadelphia, W. B. Saunders Company, 1946, vol. 3, p. 618.

9. Oddi, R.: D'une disposition à sphincter spéciale de l'ouverture du canale cholédoque, Arch. ital. de biol. **8**: 317-322, 1887.

10. Hartman, F. L.; Smyth, C. M., Jr., and Wood, J. K. W.: The Results of High Ligation of the Cystic Duct in Cholecystectomy, Ann. Surg. **75**: 203-207, 1922.

for the dilation of the cystic duct is untenable. It is possible that stones which either are left behind or are developed in the cystic duct produce obstruction and dilatation. The failure to find stones in the dilated stump of the cystic duct may be due to extrusion of the stone into the common duct. Hicken cited a case in which a dumb-bell shaped stone in the cystic duct protruded into the common duct and caused obstruction. Clute [11] stressed the fact that tiny stones which lie between the folds of the cystic duct may easily be overlooked and urged incision of the cystic duct before ligation.

SUMMARY

A case is presented in which there was preoperative cholecystographic visualization of nonopaque calculi within a dilated stump of the cystic duct in a patient who was symptom free for 12 years after her original cholecystectomy for stones.

Routine cholecystography in patients presenting symptoms following cholecystectomy may be of great value.

The desirability of resection of the cystic duct as closely as possible to its junction with the common duct during cholecystectomy is stressed.

In patients who undergo an exploratory operation after cholecystectomy, in addition to exploration of the common duct, it is necessary to examine carefully the region of the cystic duct stump. In many cases the dilated stump is not discovered unless the remnant of the cystic duct is probed through the incision in the common duct.

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

Aminophylline-U.S.P. (See New and Nonofficial Remedies 1950, page 278).

The following dosage forms have been accepted:

Solution Aminophylline with Benzyl Alcohol 2%: 2 cc. ampuls. A solution containing 0.25 Gm. of aminophylline in each cc. *Solution Aminophylline:* 10 cc. and 20 cc. ampuls. A solution containing 25 mg. of aminophylline in each cc. Paul B. Elder Company, Bryan, Ohio.

Tablets Aminophylline: 0.1 Gm. and 0.2 Gm. Keith-Victor Pharmacal Company, St. Louis.

Solution Aminophylline: 2 cc. ampuls. A solution containing 0.25 Gm. of aminophylline in each cc. 10 cc. and 20 cc. ampuls. A solution containing 25 mg. of aminophylline in each cc. Meyer Chemical Company, Detroit.

Tablets Aminophylline: 0.2 Gm. enteric coated. E. S. Miller Laboratories, Inc., Los Angeles.

Dihydrostreptomycin (See THE JOURNAL, July 8, 1950, page 896).

The following dosage forms have been accepted:

Solution Dihydrostreptomycin Sulfate: 10 cc. vials. A solution containing dihydrostreptomycin sulfate equivalent in activity to 0.5 Gm. of dihydrostreptomycin base. Preserved with 0.25 per cent phenol. *Solution Dihydrostreptomycin Sulfate:* 2 cc. ampuls. A solution containing dihydrostreptomycin sulfate equivalent in activity to 1 Gm. of dihydrostreptomycin base. Preserved with 0.25 per cent phenol. Eli Lilly and Company, Indianapolis.

Dihydrostreptomycin Sulfate: 50 cc. vials. Dihydrostreptomycin sulfate powder equivalent in activity to 5 Gm. or 10 Gm. of dihydrostreptomycin base. Charles Pfizer and Company, Inc., Brooklyn.

Methionine (See New and Nonofficial Remedies 1950, page 367).

The following dosage form has been accepted:

Capsules Methionine: 0.5 Gm. U. S. Vitamin Corporation, New York.

Benzyl Benzoate-U.S.P. (See New and Nonofficial Remedies 1950, page 107).

The following dosage form has been accepted:

Lotion Benzyl Benzoate: 473 cc. and 3.78 liter bottles. An oil in water emulsion containing 25 per cent V/W benzyl benzoate, 13 per cent lanolin, 2.5 per cent stearic acid, and 1 per cent triethanolamine. Smith-Dorsey Company, Lincoln, Neb.

Aluminum Hydroxide Gel-U.S.P. (See New and Nonofficial Remedies 1950, page 288).

The following dosage form has been accepted:

Tablets Alkagel: 0.32 Gm. and 0.65 Gm. (U. S. Trademark 335,060). Lanteen Medical Laboratories, Inc., Evanston, Ill.

Heparin Sodium-U.S.P. (See New and Nonofficial Remedies 1950, page 301).

The following dosage form has been accepted:

Solution Heparin Sodium: 10 cc. vials. A solution containing 1,000 U.S.P. units (10 mg.) of heparin sodium in each cc. Preserved with 0.5 per cent phenol. Testagar and Company, Inc., Detroit.

Methyltestosterone (See New and Nonofficial Remedies 1950, page 359).

The following dosage form has been accepted:

Tablets Methyltestosterone: 10 mg. and 25 mg. The Upjohn Company, Kalamazoo, Mich.

Ascorbic Acid-U.S.P. (See New and Nonofficial Remedies 1950, page 469).

The following dosage form has been accepted:

Tablets Ascorbic Acid: 25 mg., 50 mg. and 100 mg. Gold Leaf Pharmacal Company, Inc., New Rochelle, N. Y.

Methamphetamine Hydrochloride-U.S.P. (See New and Nonofficial Remedies 1950, page 214).

The following dosage form has been accepted:

Tablets Methamphetamine Hydrochloride: 5 mg. The Warren-Teed Products Company, Columbus, Ohio.

Chloramphenicol (See THE JOURNAL, July 1, 1950, page 813).

The following dosage form has been accepted:

Capsules Chloromycetin: 50 mg. (U. S. Patent 2,483,871, 2,483,884, 2,483,885, 2,483,892). Parke, Davis & Company, Detroit.

11. Clute, H. M.: Cystic Duct Stones after Cholecystectomy, M. Clin. North America **13**: 603-607, 1933.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. . . . . CHICAGO 10, ILL.
Edited by . . . . . AUSTIN SMITH, M.D.
Associate Editor . . . . . JOHNSON F. HAMMOND, M.D.
Editor for Current Medical Literature, GEORGE HALPERIN, M.D.

Subscription price . . Fifteen dollars per annum in advance
Cable Address . . . . . "Medic, Chicago"

FORMATION OF AMERICAN MEDICAL EDUCATION FOUNDATION

The action of the Board of Trustees at the Cleveland meeting in appropriating one-half million dollars as the Association's initial contribution to an annual fund to be raised by the medical profession to assist the medical schools has been widely applauded as one of the most constructive and important programs ever undertaken by the American Medical Association. In announcing the establishment of this fund, the Board of Trustees expressed the hope that the Association's contribution would be greatly augmented by gifts from many other sources and urged all members of the Association to contribute individually. The initial response of the profession has been most gratifying. Many physicians in attendance at the Cleveland meeting inquired how they should make their contributions, and since the meeting letters requesting similar information have been received daily at Association headquarters.

It can now be announced that the American Medical Education Foundation has been established as a not-for-profit corporation, under the laws of the state of Illinois, to receive and distribute contributions to the fund from the individual members of the medical profession and friends of the profession. The Commissioner of Internal Revenue has been asked to rule that gifts to the foundation will be deductible in the computation of income taxes. An 11 man board of directors chosen from the Board of Trustees, the officers of the Association and the Council on Medical Education and Hospitals will be responsible for arranging for the distribution of the funds to all approved medical schools. The funds are to be unrestricted, with each medical school free to determine how it can best use its share to further the basic training of its students. It is planned that the foundation will coordinate its activities closely with other major efforts to raise funds for medical education from voluntary sources, which it is hoped will be announced shortly.

Each member of the medical profession is urged to demonstrate his support of this new undertaking by contributing promptly and generously. Because of rising costs, inflation, fewer large individual benefactions and reduced income from endowments, the medical schools need, without further delay, assistance of the type this fund can give. It is the desire of the foundation that the first annual disbursement of funds to the medical schools be made this spring. It is clear that, if the foundation's contribution is to be an effective one, a substantial fund must be raised by the medical profession within the next few months. It is therefore urged that each physician consider an annual contribution of $100. Many of the contributions already received exceed this figure. When a physician feels that this amount is beyond his means, smaller contributions will be welcome, but the profession must recognize that substantial sums are required and that token contributions alone will not be sufficient.

Almost every physician now practicing received his medical education for less than what it cost his medical school. While many physicians have discharged this debt to society in full or in part, by public and charitable activities and by donations to the schools with which they have been associated, many are still indebted to one or more medical schools for their training as students, interns or residents. Furthermore, the medical profession has traditionally accepted a large measure of responsibility for the training of the continuing flow of young physicians, on which it must depend for recruits and replacements in its efforts to serve humanity. It is to be expected, therefore, that all physicians, regardless of the other contributions they may have made to society, will want to share in the responsibility of making the foundation a success.

The American Medical Association has indicated its belief that the possibilities of securing adequate support for medical education from voluntary sources are far from exhausted. To prove this, actions as well as words are required. The challenge has now been made directly to the medical profession. The members of the profession can meet this challenge by sending their contributions today to the American Medical Education Foundation, 535 North Dearborn Street, Chicago 10.

DEFERMENT OF STUDENTS IN TIME OF NATIONAL EMERGENCY

One of the most serious and difficult problems arising out of the present national emergency is that of devising a plan that will guarantee this nation an adequate continuing supply of men trained in the many and varied disciplines that contribute to the national defense. In time of peace the continuing replenishment of the supply of professional, scientific and specialized personnel is important to the welfare of this country. In time of war it becomes a matter of the greatest urgency as a means of insuring the safety and survival of the nation.

There must be a constant flow of students through institutions of higher learning to produce the scientific and professional personnel needed. In peacetime this flow is governed largely by the wishes of the individual student. Under the manpower stress of an emergency it becomes necessary to select those who can make their most valuable contribution to the national effort by preparing themselves as specialists in one or another field of learning. Not only are the problems involved in the establishment of such a selective process many and difficult, but those who urge the

adoption of such a process are all too frequently misunderstood.

In the selection of students for deferment certain primary considerations must be met. One obvious essential is that students must be selected whose personal and intellectual endowment is fitted to the tasks for which they are chosen. It is equally important that the selection be made in a fair and democratic way. General Hershey, National Director of the Selective Service System, was well aware of these considerations when, in December 1948, he appointed a group of six scientific advisory committees to advise him how the Selective Service System "might best classify individuals so that they may best serve the health, safety and interest of the nation." These committees, made up of distinguished leaders representing agricultural and biologic sciences, engineering sciences, the healing arts, the humanities, the physical sciences and the social sciences, deliberated and conferred with the Director over a period of two years.

On Dec. 18, 1950 the committees submitted a public report to General Hershey in which they recommended that in the national interest a flow of students of high promise be maintained at the college and graduate school level. To accomplish this objective they recommended that there be established within the Selective Service regulations a class of registrants in which should be placed any registrant whose demonstrated educational aptitude is such that it is deemed necessary that his preprofessional or professional training be continued, in order to increase his potential value to the national health, safety and interest. The committees recommended that educational aptitude be defined as a specified minimum score on a general classification test and a record of previous educational accomplishment sufficiently high to indicate special promise of eventual scientific, professional or specialized competence. They pointed out that the test scores and academic standings adopted as the criteria could be adjusted periodically to permit the deferment of a greater or lesser number of students to meet varying manpower needs.

The committees emphasized that deferment of a registrant for further training should not constitute exemption from military duty. They therefore recommended that students deferred for education or training should have their period of liability under Selective Service extended beyond the normal top age limit by a period of time equivalent to that during which they are deferred.

With the mounting tension of the international situation bringing demands for the early establishment of a program of universal military service, it is certain that the deferment of students and other aspects of the manpower problem will be extensively debated in Congress, in the press and from many platforms during the next several months. Already two challenging articles, reflecting opposing views on this subject, have been presented by President Conant of Harvard and President Cole of Amherst in *Look* magazine. President Conant, who favors universal military service, holds in essence that the most important deterrent to further Russian aggression will be a large army, numbering at least three to three and a half million men, and that the best way to secure such an army would be to draft all men at age 18 or immediately on completion of high school for two years of military service. There should be no deferments or exemptions for college students or anyone else. Youths not physically fit to serve in the armed forces should serve the government in other capacities for the same period of time and for the same pay. The acquirement of all higher education would be postponed until after completion of military or other government service.

President Cole, taking an opposing view, contends that it is futile for the United States to attempt to compete with Russia and its satellites primarily on the basis of manpower. He declares the potential superiority of the United States lies in the fact that "we can provide our armed forces with more specialists and back up our armed forces with more specialists than any other country. But," Cole warns, "this source of strength is ours only so long as we continue to train young men." President Cole's solution is the one offered by the six scientific advisory committees. He objects to Conant's proposals on a number of grounds. Drafting all 18 year old men for two years would not produce the army of three to three and a half million men that has been recommended. It would, therefore, become necessary either to extend the period of conscripted service to three or four years or to take additional men from older age groups. Even if the break is only for two years, no one can guess with any degree of accuracy how many able men will turn aside from further education.

Another criticism of the Conant plan that has been offered is that it inevitably places certain large groups of persons in double jeopardy. Physicians, dentists, engineers, veterinarians and other specialists are essential to the armed forces. Under the Conant plan these men would serve twice, once immediately after high school and again subsequent to completion of their special training. A similar experience would befall reserve officers in all branches. The present plan of the armed services is to rely heavily on the R.O.T.C. for officer training. Cole points out, "It might be hard to get 20 year olds just out from two years' service to enlist in the R.O.T.C. and obligate themselves for two years' more service."

Since the proposals outlined above were published several additional compromise plans have been offered. These, in essence, would require the induction of all men at age 18, with some men being subsequently permitted to enter college after they had had a period of basic military training of four or more months. There are serious objections to such plans. Not only would inducting, equipping and then discharging men in such a brief period of time be expensive and wasteful, but it is doubtful whether the training achieved in such a short time would be of any lasting value. Furthermore, there is no guarantee that the number of students permitted to enter college would be adequate for civilian as well as military needs. However, the strongest objection that can be raised to these proposals is that they would seem to give to branches of the federal government the preponderant role in controlling

the education of the nation's youth. It is doubtful whether under such plans the selection of students for college would remain in the hands of the colleges, where it belongs.

The manpower problem will be argued hotly in the months ahead, but the fate of the country may well depend on ability to reach a cool and rational decision. Probably no solution can be found that will satisfy all or that will be entirely free of inequities. The plan recommended by the six scientific advisory committees is the soundest yet proposed, and as such it deserves vigorous support in the debate that lies ahead.

DISTRIBUTION OF PHYSICIANS IN THE UNITED STATES

The Bureau of Medical Economic Research of the American Medical Association has been studying for several years the distribution of physicians in the United States. Repeatedly the Bureau has stressed the futility of attempting to show physician distribution by the use of state or county boundary lines. It believes a better solution lies in the determination of the actual distribution throughout the nation by medical service areas (rather than by counties or states). The Bureau recently published additional data in Bulletin 80.[1] This bulletin, which is the fourth in a series, presents for the first time the size and population of each of the 757 medical service areas in the United States.

These areas are based on the trading area principle, and few of their boundaries coincide with the boundaries of states, counties and other political areas. The apportionment of the land area and the population of the counties that lie in two or more medical service areas to each area is set forth in this new bulletin. Of the approximately 42,000 places (cities, towns, villages, whether incorporated or unincorporated) in the United States with a population of 100 or over, the authors estimate that, counting all physicians, between 16,000 and 17,000 places have one or more physicians; thus more than one third of all the 42,000 places have a physician.

From the findings of the Bureau of Medical Economic Research one can determine the actual medical service areas served by physicians. Further study will reveal what medical coverage actually is available for the population of each area. Furthermore, as the people in each area obtain most of their medical services from the physicians in the area, these are the best geographic areas currently available for determination of which physicians could be spared for military service during a major war.

1. Dickinson, F. G., and Bradley, C. E.: Medical Service Areas: Population, Square Miles and Primary Centers, Bureau of Medical Economic Research, American Medical Association, Bulletin 80, 1950, 40 pp. The three earlier publications were: Dickinson, F. G.: Medical Service Areas in the United States, J. A. M. A. **133**: 1014 (April 5) 1947, reprinted as Bulletin 52, 5 pp.; Dickinson, F. G.: A Medical Service Area Map of the United States, J. A. M. A. **139**: 1021 (April 9) 1949, reprinted in Bureau Bulletin 67, Four Recent Articles on Medical Economics, pp. 3-10; Dickinson, F. G.; Bradley, C. E., and Cargill, F. V.: Comparisons of State Physician-Population Ratios for 1938 and 1949, Bureau Bulletin 78, 1950, 14 pp.

1. Nathanson, M. H., and Miller, H.: The Action of Nor-Epinephrine and of Epinephrine on the Ventricular Rate of Heart Block, Am. Heart J. **40**: 374 (Sept.) 1950.

CARDIAC EFFECTS OF NOR-EPINEPHRINE

Nathanson and Miller [1] report investigations on the effect of nor-epinephrine and epinephrine on the ventricular rate. They chose for their study patients with complete heart block because the ventricular rate in heart block is relatively stable and is uninfluenced by extraneous factors and because the sympathomimetic compounds are the only substances that effectively increase the activity of the ventricular pacemaker. Both compounds were administered in doses of 0.03 mg. by a rapid intravenous injection. A continuous electrocardiogram was made and blood pressures recorded after 30 seconds and at one minute intervals thereafter. The injection of nor-epinephrine caused within 30 seconds an abrupt rise in the blood pressure, which lasted five to eight minutes. However, the ventricular rate showed only a slight and transient increase. The average increase in the ventricular rate in the 10 patients with complete heart block was five beats per minute. After the administration of epinephrine, there was a pronounced and sustained increase in the ventricular rate, the average increase being 29.3 beats per minute.

It appears, therefore, that epinephrine, in contrast to nor-epinephrine, possesses both a potent pressor and a cardiac-stimulating action. One of the deductions to be made from these observations is that the presence in the body of a potent sympathomimetic pressor agent with little or no cardiac-stimulating action suggests the possible participation of the sympathetic nervous system in the genesis of essential hypertension.

The authors conclude that nor-epinephrine is of no value in therapy for the prevention or treatment of cardiac standstill. Although the minimal cardiac action of the substance suggests its use as a pressor agent in hypotensive states, the authors warn that there is evidence that this compound induces ventricular fibrillation in the sensitized myocardium. This particular property of the substance indicates a hazard in its administration in conditions in which myocardial ischemia is present.

JOURNAL OF NEUROPATHOLOGY AND CLINICAL NEUROLOGY

The first issue of a new quarterly journal devoted to the specialties of neuropathology and clinical neurology appeared in January 1951. In the leading article, Dr. George B. Hassin, formerly editor of the *Journal of Neuropathology and Experimental Neurology*, stresses the relationship between neuropathology and clinical neurology. This periodical, under the editorial leadership of Drs. Hassin and Percival Bailey, will be devoted to clinical neurology and to occasional articles dealing with allied branches, such as neurophysiology and neurosurgery. Special emphasis, however, will be given to neuropathology. Developments in neuropathology, neurophysiology and neurosurgery fully justify careful study of these subjects and offer hopes for patients and physicians, whose despair at times demonstrates more adequately than words the importance of these fields.

ORGANIZATION SECTION

MEDICAL LEGISLATION BEFORE EIGHTY-FIRST CONGRESS

The following summary was prepared by the Washington office of the American Medical Association.

Nearly 17,000 legislative measures before the Eighty-First Congress, which adjourned Jan. 2, 1951, were screened by the Washington office. Four hundred and twenty of these measures were reported in the *Bulletin* of that office. The most important of the bills followed by the American Medical Association are mentioned below.

Enacted into Law

H. R. 6000, amending the Social Security Act and extending benefits to 11,000,000 additional persons, increasing benefits to all persons covered by the Act and providing for increased grants to states for maternal and child health services, aid to crippled children and child welfare, a revised system of payments for medical services performed for indigent persons and authorizing federal assistance to state public assistance programs, became Public Law 734 in August.

S. 247, creating a National Science Foundation with a medical research branch, became Public Law 507 in May.

S. 2591, omnibus research bill establishing additional medical research institutes as components of the National Institute of Health—specifically added were arthritis, rheumatism and metabolic diseases, neurological diseases and blindness—became Public Law 692 in August.

S. 4029, amending the Selective Service Act by permitting the drafting of physicians, dentists and other male members of health and allied professions into the armed forces, became Public Law 779 on September 9.

S. 3959, making nonprofit institutions such as hospitals and health centers eligible to receive federal surplus property, including equipment and supplies, became Public Law 754.

H. R. 9798 establishes a Federal Civil Defense Program under the authority of a Federal Civil Defense Administrator. The administrator would have wide and unusual powers in planning for the safety of the public in the event of enemy attacks. The Act provides that the states match federal funds. Regional offices are to be established. The President signed this bill January 12.

Failing Passage

Federal Aid to Medical Education.—S. 1453 and House companion bill H. R. 5940 would authorize the federal government to give direct grants to medical schools for five year emergency scholarships, cost of instruction, construction and equipment. The Senate bill passed in 1949. The House version was amended several times but was never brought to the floor for vote.

Local Public Health Units.—S. 522 and H. R. 5865 would supplement present grants to state boards of health, with these funds earmarked for assistance to local health units throughout the country. The Senate version passed in 1949, but the House bill was tabled by the Rules Committee because of expected amendments that would make it apply more definitely to national defense areas. Representative Percy Priest of Tennessee introduced H. R. 9914 just prior to adjournment, which eliminated several objectionable features of the Senate-passed bill and made it more pointedly a defense bill.

School Health Services.—S. 1411 would, by federal grants to the states, make more adequate provision for the health of school children through the development of school health services for the prevention, diagnosis and treatment of physical and mental defects. The bill would provide services to about 29,000,000 children between the ages of 5 and 17. After passage by the Senate, this bill was detained by the House Interstate and Foreign Commerce Committee and not reported to the floor.

Reorganization Plan No. 27 of 1950.—The President's Reorganization Plan 27 would have created a Department of Health, Education and Security with cabinet status. Hearings were held in both the Senate and House. The House vote of 249 to 71 killed the plan and it was unnecessary for the Senate to take further action.

New Types of Health Insurance.—During 1950, three additional types of National Health Insurance Programs were introduced: H. R. 6766 by Representative Bosone, a compulsory program financed by a 3 per cent payroll tax deduction, plus a contribution from the United States Treasury to make up the difference; S. 2940 by Senator Hunt, providing for voluntary participation in a government-operated health insurance program, and H. R. 8746 by Representative Wolverton, a bill setting up a government reinsurance corporation similar to the Federal Deposit Insurance Corporation to insure voluntary health associations against two thirds of all claims in excess of $1,000 paid to any one subscriber in a single year.

STATE LEGISLATION

The following items were prepared by the Bureau of Legal Medicine and Legislation.

Massachusetts

Bills Introduced.—H. 83, proposes to extend the authority of the department of public health to the regulation of methods of handling and disposing of **radioactive materials** and the use of apparatus emitting ionizing radiation. H. 167 and S. 231 propose to amend the law relating to **privileged communications** by providing that physicians, hospital medical officers and nurses shall not be allowed to disclose any information acquired in attending a patient in a professional capacity and which is necessary to enable him to act in that capacity without the consent of the patient in writing or in open court. The proposal would further provide that where the interests of justice require, the court may permit the physician to disclose such information even in the absence of consent. H. 250, H. 531 and H. 739 propose the **establishment of a medical school** by the University of Massachusetts and propose that of the students admitted to such school not less than 90 per cent shall be legal residents of the Commonwealth selected solely on basis of merit and academic purpose. H. 251 and H. 258 propose to require the University of Massachusetts to immediately establish, among other schools, a **school of medicine.** H. 306, proposes to amend the general law by requiring **any person** licensed to practice medicine, surgery, dentistry, optometry, osteopathy, chiropody or veterinary surgery, **who uses the prefix Doctor or Dr.** in connection with his name in any letter, business card, advertisement, prescription blank, etc., to affix suitable words or letters clearly designating the degree held by such person or the particular type of practice in which such person is engaged. H. 403, proposes to require every physician attending a pregnant woman, on his first attendance on her, to make or cause to be made a standard laboratory **blood test for syphilis** not later than 30 days after his first attendance on her. H. 722 proposes to memorialize the Congress of the United States to vote against any legislation that may eventually subject what is now a free and self reliant people to any form of **compulsory health insurance** or socialized medicine. H. 1101 proposes regulations for making available for human scientific teaching and research **certain impounded animals.** Institutions requiring the use of such animals for scientific or educational activities would be licensed by the state board of examination in veterinary medicine. H. 1437 proposes to permit **schools of chiropody,** as well as medical schools, to make use of the bodies of certain deceased persons for the promotion of anatomic science. H. 1609, H. 1820 and S. 242 propose the enactment of a **sickness compensation law.** H. 1822 and S. 243 propose the enactment of a nonoccupational **disability benefit law.** H. 1844 proposes regulations for the performance of **experiments on animals** under licenses issued by the commissioner on public safety. H. 1932 proposes that no license shall be issued or renewed to any private hospital unless such hospital retains a **resident physician at all times.** S. 394 proposes that any person who has graduated from an approved medical school and/or has been issued licenses to practice medicine in any other state shall be granted a **limited license** to practice in Massachusetts and shall be allowed the opportunity to take the qualifying examination for a license to practice in the Commonwealth.

GOVERNMENT SERVICES

ARMY

3,000 Nurses Needed at Once.—Brigadier Gen. Paul I. Robinson, Chief of Personnel, Army Medical Service, told nursing leaders on December 15 that 3,000 nurses must be obtained at once for service with the Army Nurse Corps. At a conference in the Office of the Surgeon General, General Robinson warned that the present shortage represents one of the most critical problems confronting the Army Medical Service. He asked the full cooperation of the American Nurses Association and other national nursing groups in support of military nurse procurement.

"Army Nurse Corps procurement has averaged 175 nurses per month for the last four months," General Robinson said. "This is unusually high procurement, but it is not enough. Without your immediate assistance, I hesitate to predict how we will be able to provide nursing care for the thousands of casualties returned to the United States."

In response to the appeal, the American Nurses Association called an emergency meeting of the Joint Committee on Nursing Resources to establish state procurement quotas by nursing specialties. The meeting was preliminary to a concentrated nationwide drive to fill the immediate Army Nurse Corps requirements by February 1.

Contact Camps in February for Reserve Officers—Second Army Headquarters, Fort George G. Meade, Maryland, announces that the Second Army Surgeon, Col. H. W. Glattly, and a group of specialists will conduct contact camps during February. Following is the itinerary:

Cleveland, February 3	Richmond, Va., February 11
Cincinnati, February 4	Pittsburgh, February 17
Philadelphia, February 10	Baltimore, February 18

The Second Army is taking the contact camps to the field so as not to infringe on the professional time of reserve officers by calling them to Army Headquarters. A further convenience is that they are being conducted on week ends with a starting time of 1: 30 p. m. The speakers will be:

Col. C. B. Henry, a member of the Artic Institute of North America, "Medical Service Under Artic Conditions."
Dr. Paul M. A. Linebarger, Washington, D. C., "World Intelligence."
Col. L. A. Potter, "Medical Service in the Korean Campaign."
Col. H. W. Glattly, "Reserve Affairs."

The Army Medical Service Reserve Officers, which will hold separate meetings, will be addressed by:

Col. John R. Wood, chief of the Research and Development Division, Surgeon General's Office.
Col. O. F. Goriup, chief of the Medical Servic Corps, Surgeon General's Office.
Col. Leland G. Meder, Second Army Dental Surgeon.
Brig. Gen. James A. McCallam, chief, Veterinary Division, Surgeon General's Office.
Col. E. E. Vogel, chief, Women's Medical Specialist Corps, Surgeon General's Office.
Lieut. Col. E. G. Mixson, Chief Nurse, Second Army Area.

The meetings will begin at 1330 hours and will close promptly at 2100 hours. All reserve officers are invited to attend. A social hour and dinner are included in the agenda.

DeCoursey Made Brigadier General.—Col. Elbert DeCoursey (MC), director, Armed Forces Institute of Pathology, has been advanced to the rank of brigadier general. The Surgeon General, Major Gen. R. W. Bliss, pinned the stars on General DeCoursey during a brief ceremony. Former Commandant of the Army Medical Service Research and Graduate School, Army Medical Center, Washington, D. C., General DeCoursey has been director of the Armed Forces Institute of Pathology since last August. General DeCoursey received his doctor's degree from Johns Hopkins Medical School in 1928 and graduated from the Army Medical School, Washington, D. C., the following year. During World War II he was appointed a member of the Joint Commission for the Investigation of the effects of the atomic bomb in Japan in 1945. He also served as consultant to the Division of Biology and Medicine of the Atomic Energy Commission.

NAVY

Civilian Ships Doctors Wanted.—The Military Sea Transportation Service, Atlantic, is accepting applications for civilian positions of ships doctors aboard Navy transports. These transports are vessels operated by the Navy for the International Refugee Organization in connection with the resettlement of displaced persons from Europe to various countries throughout the world. Doctors who are accepted for such employment join their ships at New York and sail for Europe and thence to various ports throughout the world. Voyages generally are of 90 days' duration, the vessels returning to New York. The salary is $6,985 per annum plus maintenance. Applicants may apply for one or more voyages and are not bound to serve beyond one voyage.

Applicants are required to possess a current license to practice medicine or surgery issued under the authority of a state or territory of the United States or the District of Columbia. They must have been graduated from an approved school of medicine and have completed at least one year of general rotating internship. Candidates must be United States citizens and be available to leave on short notice. The age limits are 25-62. These age limits do not apply to persons entitled to veteran preference. Information may be obtained from the Employment Branch, Industrial Relations Division, Military Sea Transportation Service, Atlantic, 58th Street and First Avenue, Brooklyn 20.

Award and Commendation.—Comdr. Byron D. Casteel was recently awarded the Bronze Star by the Army for meritorious achievement in connection with operations against the enemy while serving as regimental surgeon with the 5th Marines in Korea. The citation was as follows:

"Lieutenant Commander Byron D. Casteel, 154989, United States Navy, is cited for meritorious achievement in connection with operations against the enemy while serving as regimental surgeon of the 5th Marines in Korea during the period from Aug. 7 to Aug. 27, 1950. Assuming control of a newly organized regimental medical service, after the regimental surgeon had been wounded in action, Commander Casteel discharged his responsibilities wisely and with great attention to detail, effectively organized and coordinated the various medical components into a smoothly functioning team. A capable and inspiring officer, Commander Casteel constantly attended the wounded at the regimental aid station, and on many occasions visited the forward areas under heavy enemy fire in order to insure that adequate medical attention was being administered. His skilled service, professional abilities and exemplary conduct throughout this period were in keeping with the highest traditions of the United States Naval Service."

Captain Graybiel Receives Lyster Award.—Capt. Ashton C. Graybiel (MC, USN) has been awarded the Theodore C. Lyster award for 1950. He was selected for the award because of his contributions to aviation medicine, which included original work concerning orientation in space. Prior to entering the Navy, Captain Graybiel was with the Harvard University Fatigue Laboratory; he was assistant visiting physician, Massachusetts Memorial Hospital, and assistant in medicine, Massachusetts General Hospital, and did research work in cardiovascular reactions of aviators. He is attached to the Naval School of Aviation Medicine as head of the research division.

PUBLIC HEALTH SERVICE

Laboratory Training Courses.—The Public Health Service has issued a pamphlet containing information on a number of laboratory training courses that will be given by the Communicable Disease Center in Georgia during the present calendar year. Among the courses scheduled are those on laboratory diagnosis of syphilis, tuberculosis, parasitic diseases, enteric diseases, mycotic diseases, virus diseases and clinical chemistry. The purpose is to develop accuracy in the professional laboratory worker and to acquaint him with the best methods for each procedure. The courses are open to all grades of employed laboratory personnel from nonprofit diagnostic laboratories approved by their state health officers. Most classes are limited to 22 students, and no fees are charged. Travel and living accommodations must be paid for by the student or his employer. The duration of the courses varies from one to four weeks. Information may be obtained from the Officer-in-Charge, Laboratory Training Services, Communicable Disease Center, U. S. Public Health Service, P. O. Box 185, Chamblee, Ga.

Inventory of Health Department Personnel. — Manpower requirements of state and local health departments, both for normal activities and for meeting essential needs in time of emergency, are being inventoried by the Public Health Service at the request of the National Security Resources Board. The Surgeon General said the study should be completed within the next few months. The information, which will include a tabulation of all existing vacancies in health departments and the reasons for those vacancies, is expected to establish the most accurate guidelines to date of the actual manpower situation in state and local health departments.

Aid in Epidemics or Disasters.—Fourteen states, two territories and two foreign countries that suffered epidemics or disasters during 1950 received emergency aid from the United States Public Health Service. Four state health departments requested federal assistance during serious epidemics of poliomyelitis in 1950. In addition, rabies in vampire bats in Mexico and in mongooses in Puerto Rico created two unusual epidemic problems. Rabies epidemics among dogs and other animals also were combated in Alaska and three states.

The emergency calls were handled through the Communicable Disease Center, Atlanta, Ga., which is the major division of the Public Health Service responsible for providing epidemic and disaster aid to state and local health departments. The degree of assistance given ranged from consultation with experts to full scale epidemic aid, provided by mobile teams consisting of engineers, entomologists, nurses, physicians, scientists, veterinarians and other specialists. The combination of field and laboratory research has produced the means for wiping out such complicated epidemic diseases as rabies. A case in point is the success in curbing the rabies epidemic which began in May in Puerto Rico, an island traditionally believed free of this disease. On receiving a request for aid from the commissioner of health of Puerto Rico, the Communicable Disease Center sent a veterinarian and a laboratory technician to the island. They found rabies virus in dogs, cats, cattle, hogs and other animals, in widely separated parts of the island. After months of study it was proved that the epidemic was spread by wild mongooses. The epidemic was brought under control without a single human case.

Indo-China Health Program.—The public health program in Indo-China has moved forward since the U. S. Public Health specialists arrived in Hanoi in August. As part of the Special Technical and Economic Mission for the United States, assistance in raising the health and economic standards of the people, projects for the control of malaria, venereal diseases and trachoma are under way in cooperation with the national, provincial and local Vietnamese authorities.

By October thousands of houses in Hanoi and 10 other towns and villages in Northern Vietnam had been sprayed with DDT under the direction of Dr. F. Earle Lyman of the Communicable Disease Center, Atlanta, Ga., and Dr. Vy, public health director for North Vietnam. An estimated 10,000 persons had been given antimalarial tablets. About 500 blood slides taken of selected population groups in the Hanoi district were shipped to the Communicable Disease Center in Atlanta for staining and reading.

In the Saigon-Cholon area, four crews, organized by Dr. Harry D. Pratt of the Communicable Disease Center, sprayed nearly 6,900 houses during September. By the end of October there were five spray teams organized also in Central Vietnam. Civilians and soldier spraymen have been employed in the Central Vietnam malaria program, which is under direct civilian supervision. Governor Giaos made an appropriation of funds to start the malaria control work and the chief of the Central Vietnam armed forces volunteered to take the teams wherever necessary.

Publicity materials have been prepared in the educational program for control of trachoma. Through the organization of survey and treatment teams and the extended use of aureomycin for victims of this disease, trachoma is also on the way toward control. Under the direction of Dr. Vy and under general supervision of Dr. Andrew Para, quarantine officer from New York City, five nurses began treatment of trachoma patients in September in two suburban areas of Hanoi. Dr. Pham Van Tien, director of the Ophthalmological Institute in Hanoi, is cooperating in the treatment program. Increased supplies of aureomycin and a complimentary supply of aureomycin sent by Lederle Laboratories in New York have been used to treat about 2,000 persons with trachoma.

A limited venereal disease control program has been started. Over 2,200 prophylactic doses of penicillin, given at the Rodier Hospital in Hanoi, resulted in a decided decrease in positive gonorrhea smears in a three week period.

VETERANS ADMINISTRATION

Study of Organization of Veterans Administration.—The Administrator of Veterans Affairs, Carl R. Gray Jr., has announced the selection of the management engineering firm of Booz, Allen and Hamilton of Chicago, to conduct a study of Veterans Administration organization and operation. The survey, which will extend over a period of 14 months, will be for the purpose of determining whether changes in organization and operational procedures are necessary to provide the best possible service to veterans at the lowest possible cost. The study, which will begin about Jan. 15, 1951, will encompass a thorough study of the VA Central Office in Washington, district offices, regional offices and centers and hospitals in field locations. All phases of the VA's operations will be included in the scope of the study.

Halloran Hospital.—The Veterans Administration will surrender its leased portion of Halloran Hospital on Staten Island to the state of New York on April 1, 1951. All veteran patients will be removed from the hospital by February 15. Surrender of the beds to the state was made necessary by the fact that certain hospital facilities have been taken from the state because of the national military emergency. There are about 475 veteran patients in Halloran, most of whom will be discharged prior to February 15 as having completed treatment, but any remaining will be transferred to other VA hospitals. All the 87 paraplegic veteran patients will be transferred to other hospitals where the Veterans Administration maintains paraplegic rehabilitation and treatment facilities. The 76 tuberculous patients in Halloran will be given a choice of transfer to VA hospitals at Batavia and Sunmount, N. Y., and Framingham, Mass. Members of the staff at Halloran will be retained in other VA hospitals and reassembled in a new hospital at the earliest possible date.

Personal.—Dr. Albert F. R. Andresen, professor of gastroenterology, State University of New York College of Medicine, addressed the staff at the Veterans Administration Hospital, Northport, N. Y., on Nov. 21, 1950, on the diagnoses and roentgen observations in peptic ulcer.

MEDICAL NEWS

ALABAMA

Children's Health Council.—Representatives of 13 civic and fraternal organizations met in Birmingham in December and formed the St. Lucie Children's Health Council to provide medical services for children of the community whose parents are unable to provide it. Two members of the medical profession are being asked to serve on the board of directors. The council is a project of the Junior Woman's Club. The Soroptimist Club of Fort Pierce has announced that it will take care of clerical work of the council.

CALIFORNIA

Research in Causes of Blindness.—A grant of $3,500 to the Stanford University School of Medicine, San Francisco, for two research projects concerned with amblyopia ex anopsia (partial blindness associated with strabismus) and congenital cataracts has been made by the National Society for the Prevention of Blindness. Congenital cataracts are a cause of blindness in 16 per cent of the children in schools for the blind in the United States, according to Dr. Franklin M. Foote, New York, executive director of the society.

Mid-Winter Radiologic Conference.—The third annual Mid-Winter Radiological Conference, sponsored by the Los Angeles Radiological Society, will be held at the Biltmore Hotel on February 24-25. Nonradiologic colleagues interested in any of the courses are invited. The cost for the two day session is $15. At a banquet Saturday evening, the guest speaker will be Dr. W. Edward Chamberlain, professor and chairman of the department of radiology, Temple University, Philadelphia. A second out-of-state speaker at the conference will be Dr. Edward B. D. Neuhauser, Boston. The fee for the banquet will be $5. Reservations for the conference and banquet should be accompanied by a check for $20 and sent to Dr. John B. Hamilton, 210 North Central Avenue, Glendale 3. Hotel Reservations may be made by direct application to the convention manager of the Biltmore Hotel, Los Angeles.

COLORADO

Midwinter Postgraduate Clinics.—The Colorado State Medical Society Midwinter Postgraduate Clinics will be held February 21-23 with headquarters at the Shirley-Savoy Hotel, Denver. Guests at the pediatric clinic include Drs. Charles A. Janeway, Boston, and John R. Schenken, Omaha, and at the clinic on anesthesia problems in surgery, Dr. Rolland J. Whitacre, Cleveland. Other guest speakers include Dr. Edward J. McCormick, surgeon, Toledo, Ohio; Dr. Charles H. Burnett, internist, Dallas, Texas; Dr. Reed M. Nesbit, urologist, Ann Arbor, Mich., and Dr. Bentley C. Colcock, surgeon, Boston. Luncheons and round tables will be held. The subscription dinner dance sponsored by the Women's Auxiliary and the Colorado State Medical Society will be at 7: 00 p. m. Thursday.

FLORIDA

Health Department Asks Increase of $1,000,000.—The Florida State Board of Health has prepared a budget of $3,532,174 for consideration by the state legislature next spring, increasing its appropriation last year by more than a million dollars to operate the statewide public health program. The budget requests $1,250,000 for county health units. Last year the county units received $750,000. The increase is needed to replace the cut in federal funds.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.

GEORGIA

Narcotic Violation.—Dr. Thomas J. McMillan, Milan, was convicted in the U. S. District Court at Dublin of violation of the Federal narcotic law and on November 5 was sentenced to a term of three years.

Graduate Medical Assembly.—The Atlanta Post Graduate Medical Assembly will be held February 5-7 in the Municipal Auditorium Annex, Atlanta. The program is as follows:

Fred W. Rankin, Lexington, Ky., Modern Management of Cancer of the Colon.
Sara M. Jordan, Boston, Cancer of the Stomach.
Waltman Walters, Rochester, Minn., Cancer of the Stomach.
T. Leon Howard, Denver, Tumors of the Upper Urinary Tract.
Carleton B. Peirce, Montreal, Quebec, Diverticulosis and Diverticulitis.
George J. Thomas, Pittsburgh, Fire and Explosive Hazards in Hospitals.
John T. Godwin, New York, Nevi and Melanomas.
Grayson L. Carroll, St. Louis, Bacteriological Studies in Relation to Choice of Antibiotic Therapy.
F. William Sunderman, Atlanta, Some Clinical Aspects of Serum Electrolytes with Particular Reference to Sodium and Potassium.
George Van S. Smith, Boston, Functional Bleeding of the Endometrium.
Winchell McK. Craig, Rochester, Minn., Importance of Intraspinal Lesions in General Diagnosis.
James S. Speed, Memphis, Tenn., Minor Surgery of the Foot.
Warren W. Quillian, Coral Gables, Fla., Care of the Premature Infant.
John L. Parks, Washington, D.C., Urinary Tract Infections in Pregnancy.
Richard B. Capps, Chicago, Diagnosis and Treatment of Chronic Hepatitis.
Irvine H. Page, Cleveland, Diagnosis and Treatment of Hypertension.
Walter Bauer, Boston, Rheumatoid Arthritis, a Systemic Disease.
Samuel Proger, Boston, Obesity and Heart Failure.
John R. Mote, Chicago, Newer Concepts Concerning the Role of the Adrenal Cortex in Health and Disease.

The registration fee of $15, payable to the Atlanta Graduate Medical Assembly, may be sent to Mrs. Stewart R. Roberts, Executive Secretary, 768 Juniper Street, N.E., Atlanta.

ILLINOIS

Bureau of Industrial Hygiene to Be Abolished.—Governor Stevenson on December 28 ordered the liquidation of the Bureau of Industrial Hygiene in the State Department of Public Health, on recommendation of the Schaefer Commission to Study State Government. The commission pointed out that "one of the more obvious cases of overlapping and duplication of activities" between separate state agencies existed in the competing activities of the bureau and the Industrial Hygiene Unit of the Department of Labor's Division of Factory Inspection. The governor ordered the bureau liquidated by next June 30, the end of the present biennium. The Bureau of Industrial Hygiene currently employs 16 persons and has a biennial appropriation of $133,735. The commission's report recommended and the governor directed that the facilities of the health department's central laboratory be made available to the Department of Labor to review findings made in the course of its inspections.

Chicago

Koessler Fellowship Re-awarded.—The Institute of Medicine of Chicago announces that the Jessie Horton Koessler Fellowship for aid in research in biochemistry, physiology, bacteriology and pathology has been re-awarded for 1950-1951 to Charlotte Robertson, A.B., to continue her work on the loss of sensitivity to stimulation by cholenergic drugs manifested by denervated sweat glands and to begin an investigation of the histamine content of body secretions under the direction of Dr. Andrew C. Ivy, department of clinical science, University of Illinois.

Series of Lectures on Blood.—The Chicago Medical School is presenting a lecture series on blood which began January 17. Lectures are held Wednesdays at 12: 30 p. m. in Amphitheatre A at 710 South Wolcott Avenue. Dr. Harry D. Diamond,

New York, who opened the series January 17, spoke on "Advancements in the Treatment of Leukemias and Lymphomas."

Other lectures are as follows:

Jan. 31, George J. Scheff, Chicago, The Spleen: Functional Problems.
Feb. 14, Armand J. Quick, Milwaukee, Coagulation Mechanism.
Feb. 21, Louis R. Limarzi, Chicago, Bone Marrow Studies: Clinical Application.
Feb. 28, Steven O. Schwartz, Chicago, Hemolytic Anemias.
March 7, Charles P. Emerson Jr., Boston, Separation and Preservation of the Formed Elements and Proteins of the Blood.

MASSACHUSETTS

Cutter Lecture on Preventive Medicine.—The Harvard School of Public Health announces that Dr. Hugh M. Sinclair, professor of nutrition, University of Oxford, England, will deliver the Cutter Lecture on Preventive Medicine February 9 at 5:00 p. m. in Amphitheatre E of the Harvard Medical School, Boston. His subject will be "Nutrition Surveys of Population Groups." The lectures have been held since 1912. The medical profession, medical and public health students and others interested are cordially invited to attend.

Postgraduate Anesthesiology.—The fourth session of the annual postgraduate education program of the Massachusetts Society of Anaesthesiology will be held in the Bigelow Amphitheater at Massachusetts General Hospital, Boston, February 3, from 2:30 to 5:00 p. m. The subject will be Pulmonary Pathology Relative to the Resuscitation of the Newborn; Diagnostic Features from the Pathological, Radiologic and Clinical Viewpoints. Chairman of the program will be Dr. Benjamin E. Etsten of the New England Center Hospital, Boston.

NEW YORK

General Practice Internships.—Buffalo General Hospital has initiated its general practice internship, a rotating service for the benefit of interns who desire to prepare for general practice. Interns who wish to go beyond the single year may have an additional year of rotating internship or apply for a program of straight internship in medicine or surgery and the residency program. Application blanks for appointments may be obtained from Dr. Fraser D. Mooney, Director, Buffalo General Hospital, 100 High Street, Buffalo 3.

State Journal Golden Anniversary Issue.—The Golden Anniversary Issue of the *New York State Journal of Medicine* commemorates 50 years of continuous publication with its January 1 issue. Fifteen aspects of medicine are discussed in the symposium on medical progress, in which the emphasis is placed on developments in New York State. The journal, published twice a month by the Medical Society of the State of New York, has editorial offices at 292 Madison Avenue, New York. It goes to the 23,000 members of the state society and to a number of subscribers in all parts of the world.

Postgraduate Lecture.—Members of the Herkimer County Medical Society, meeting at the Prospect Hotel in Herkimer February 13 at 5:00 p. m., will hear Dr. Claude E. Heaton, New York, speak on "Management of Difficult Labor." The lecture is provided by the Medical Society of the State of New York with the cooperation of the New York State Department of Health.

New York City

Ward Teaching Program.—City Hospital, Welfare Island, will conduct a practical ward teaching program under the direction of Dr. Carl Reich, from February 1 to April 1. It is free to all members of the medical profession. Twenty members of the staff will take part in the teaching.

Course in Allergy.—Post-Graduate Medical School of the New York University-Bellevue Medical Center will be host to former matriculates of the three week course in allergy, given without interruption for 25 years, under the direction of Dr. William C. Spain. A two day symposium of recent advances in allergy will be held in Erdmann Auditorium, University Hospital, 303 East 20th Street, on February 2 and 3 and a 25th reunion dinner on Friday evening, February 2.

Children's Cancer Unit.—Dedication ceremonies were held December 19 for the new 36 bed Children's Pavilion at the Memorial Center for Cancer and Allied Diseases. The pavilion will nearly triple the children's facilities, which heretofore consisted only of an eight room ward. The rooms are designed so that patients will have companionship, the largest room accommodating six persons. There are two play terraces. The aim is to keep the lives of the patients as normal as possible. Class room facilities are also provided. The juvenile cancer death rate is said to be second only to the accident death rate and is the cause of 17 per cent of deaths among children.

Gift for a Chapel.—The John A. Hartford Foundation, Inc., made a gift of about $750,000 to Columbia-Presbyterian Medical Center for a chapel in memory of Mrs. Pauline A. Hartford, late wife of the chairman of the board of the Great Atlantic and Pacific Tea Company. The chapel will be located in the garden in the rear of Presbyterian Hospital at Broadway and 168th Street. It will be interdenominational. The gift provides for installation of a wired broadcasting system throughout the hospital, so that patients, using loud-speakers, can hear the organ music. Mr. Hartford, a member of the board of trustees of the hospital, has made annual gifts totaling nearly $1,500,000, aside from the latest gift.

Survey Educational Needs of Handicapped Children.—A survey to determine whether special classes and other educational facilities for physically handicapped children in New York City schools are meeting the needs of these children is being conducted as a cooperative effort by the board of education, the department of health and the New York Heart Association. There are 6,758 children in classes for the handicapped, an additional 1,606 are given instruction in their homes and 375 children in hospitals receive instruction there. The survey is financed by a $10,000 grant from the New York Heart Association, which is also rendering advisory service through Dr. Adolph R. Berger, chairman of its school committee. The department of health provides facilities and staff for the physical examination of children, and the board of education's Bureau of Child Guidance is providing the personnel for psychological testing. J. Wayne Wrightstone, Ph.D., director of the Bureau of Educational Research of the Board of Education, is directing the survey. The study is expected to last five years, because children will be followed through school. The survey will be concerned with proper placement of children, with their emotional needs, with the child's own and his family's attitude toward the handicap and toward the special classes.

Hospital Has 50 Grams of Radium.—Fifty grams of radium have been made available for treatment of cancer at Roosevelt Hospital. The 50 Gm. radium unit will be equivalent in effectiveness to a 20,000,000 volt x-ray machine and will be less costly to operate. A 30 Gm. unit recently was installed at the Cancer Institute, Louvaine, Belgium. The radium for Roosevelt Hospital was made available through the cooperation of the Union Miniere du Haut Katanga of Brussels, Belgium, and the American representative, the Radium Chemical Company, Inc.

The converging-beam radium therapy department at Roosevelt Hospital, which will be built underground in the courtyard now used for ambulances, will include the beam room, examination rooms, laboratory and offices. A duplicate "beam room" with a replica of the apparatus will be located near the beam room, where the patient can be examined, the depth and location of the tumor ascertained and the prescription for treatment planned. The therapeutic radiology department will be developed into a complete institute for the special clinical study and treatment of cancer by irradiation with particular reference to the use of gamma radiation over its entire technical range of adaptability. Bioacchino Failla, Sc.D., and Edith Quimby, Sc.D., will serve as consulting physicists. Dr. Douglas Quick, director, said that the unit at Roosevelt would not be used primarily for the treatment of advanced malignant cases; its first objective will be to reduce the number or percentage of serious types of cancer reaching the advanced stages.

NORTH CAROLINA

Medical and Surgical Symposium.—The annual Watts Hospital Medical and Surgical Symposium will be held at the Carolina Theater, Durham, February 14-15. The speakers are as follows:

Bayard T. Horton, Rochester, Minn., Clinical Use of Histamine.
J. Grafton Love, Rochester, Minn., Intractable Pain in the Neck and Upper Extremity with Particular Reference to Protrusion of the Cervical Disk.
Warner F. Sheldon, Philadelphia, Cardiac Muscle in Coronary Disease.
Waldo E. Nelson, Philadelphia, Obstructive Lesions of the Respiratory Tract.
Frank B. Walsh, Baltimore.
J. Warrick Thomas, Richmond, Va., Allergic Problems Demanding Prompt Treatment.
Perrin H. Long, Baltimore, Clinical Use of Antibiotics.
Harry P. Schenck, Philadelphia, Rhinologic Management of Allergy of the Upper Respiratory Tract.

The symposium will open at 9: 30 a. m. with a clinical pathological conference. Participants will be Drs. Sheldon, Nelson and Barton R. Young, all of Philadelphia. The Wednesday evening program will be a panel discussion on headache, with six visiting physicians taking part. Dr. E. Charles Kunkle, Durham, will be moderator. The second panel discussion on respiratory infections will open the meeting Thursday morning. Dr. Long will serve as moderator.

OHIO

Friedlander Lecture.—Dr. Samuel A. Levine, Harvard Medical School, Boston, will deliver the Alfred Friedlander Lecture at a joint meeting of the Academy of Medicine of Cincinnati and the Heart Council January 23. The subject will be "A Plea for the Stethoscope."

Postgraduate Lecture Series.—The Medical Advancement Trust of the Maumee Valley Hospital has arranged a series of lectures to be given January 24-25 in the new St. Vincent's Hospital building, Toledo, by Dr. Samuel A. Levine, clinical professor of medicine, Harvard Medical School, Boston. The lectures will be given at 12 noon, 4:00 p. m. and at 8:00 p. m. on both days. Subjects are auscultation of the heart, reversible forms of heart disease, treatment of congestive heart failure, diagnosis and treatment of masked thyrocardiac disease, functional heart disease and the office cardiovascular examination.

Course for Cardiovascular Investigators.—A training course for cardiovascular investigators, sponsored jointly by the U. S. Public Health Service, American Heart Association and Western Reserve University School of Medicine, Cleveland, will be repeated for the third time in the university's department of physiology from July 1, 1951 to June 30, 1952. Dr. Carl J. Wiggers will be in personal charge. The course will consist of formalized training in methods used in cardiovascular research. While primarily organized for postdoctorate training, a few specially qualified predoctorates may be accepted. Postdoctorate candidates accepted will be recommended by the director of the National Heart Institute, U. S. Public Health Service, for a research traineeship carrying a stipend ranging from $3,000 to $3,600 per annum, depending on marital status. Details may be obtained from Dr. Carl J. Wiggers, Program Director, Western Reserve University School of Medicine, Cleveland 6.

PENNSYLVANIA

State Society to Honor Centenarians.—The Medical Society of the State of Pennsylvania for the fourth year will present testimonial plaques to all residents of the state who will attain their one hundredth birthday during 1951. Presentation of each plaque will be made by officers of the medical society of the county where the centenarian resides. During 1950, thirty-one centenarians in Pennsylvania, 24 women and seven men, were honored for their longevity by the medical society. The medical society, 230 State Street, Harrisburg, requests that the names and birth dates of all those residents of the state who will become 100 years old in 1951 be sent to it.

Philadelphia

Dr. McGuinness Named Dean.—Dr. Aimes C. McGuinness, director of Children's Hospital of Philadelphia since 1948, became dean of the University of Pennsylvania's Graduate School of Medicine January 1, succeeding Dr. William S. Parker, who resigned to resume private practice. Dr. McGuinness has been senior visiting physician at Children's Hospital and assistant professor of pediatrics at the University of Pennsylvania School of Medicine since 1946. Dr. Parker will continue on the surgical faculty.

TEXAS

Pharmaceutical Research Grant.—The Pharmaceutical Foundation of the University of Texas has received a research grant of $3,600 from Sharp & Dohme, Inc., Philadelphia. The grant, one of the first issued to the new foundation, will be used for an investigation of a genus of fungi and its antibiotic properties, under the direction of Henry Burlage, Ph.D., dean of the college of pharmacy.

Cancer Research Hospital.—Ground has been broken for the $5,242,000 M. D. Anderson Hospital for Cancer Research, the first of four units planned in Houston by the University of Texas. The hospital was planned as a 300 bed unit, but because of construction costs and available funds, officials approved plans for a unit of 150 beds. Funds for the project were furnished by the federal government, the state, the people of Houston and the M. D. Anderson Foundation. The hospital is situated on a 30 acre tract in the Texas Medical Center. Other units planned for the University of Texas tract include a dental school now operating in small quarters, a postgraduate school of medicine now using temporary facilities along with the Anderson hospital and a school of public health in geographic medicine. Anderson hospital now contains about 80 beds in temporary quarters. It was established in 1943 and named for the late Monroe D. Anderson of Houston, who left over $20,000,000 to be administered for the "public good." The hospital is the state cancer hospital, to which patients are referred by physicians.

WYOMING

Institute for Newborn and Premature Infant Care.—The Public Health Committee of the State Medical Society, the State Department of Public Health and the State Board of Public Health will reimburse a limited number of Wyoming physicians $100 toward expenses of attending the Denver Institute on Newborn and Premature Infant Care on February 5-9. Dr. Eli C. Ridgway Jr., Cody, chairman of the Public Health Committee of the Wyoming State Medical Society, will accept applications from interested physicians. There is a registration fee of $10, but there will be no charge for tuition. The institute will be held at the University of Colorado School of Medicine.

GENERAL

Meeting on Group Psychotherapy.—The ninth annual conference of the American Society of Group Psychotherapy and Psychodrama will take place February 16-17 at the Commodore Hotel, New York. The program is built around the use of group psychotherapy and psychodrama in military, Veterans Administration and state hospitals. The opening address will be given by Dr. Jacob L. Moreno, president. For program and reservations write to P. O. Box 311, Beacon, N. Y.

Dr. Schweitzer, Man of the Century.—Dr. Albert Schweitzer, Alsatian missionary, on December 30 was named "Man of the Century" by the National Arts Foundation, a private philanthropic organization. This election was made by prominent artists, writers and musicians in 17 countries. Dr. Schweitzer, theologist, philosopher, organist and writer, has been a medical missionary in French Equatorial Africa for over 30 years. He founded a hospital in Lamboréné, financing it with receipts from his organ concerts and with the help of friends. In the summer of 1950 he visited the United States, when he attended the Goethe festival in Aspen, Colo.

Society Elections.—At the annual meeting of the Association for Research in Nervous and Mental Disease in New York in December the following officers were elected for the year 1951: Dr. S. Bernard Wortis, New York, president; Dr. Clarence C. Hare, White Plains, N. Y., secretary-treasurer, and Dr. Rollo J. Masselink, New York, assistant secretary.—— The Seaboard Medical Association at its meeting in Elizabeth City, N. C., in December, chose Dr. R. Bryan Grinnan Jr. of Norfolk, Va., president and reelected Dr. L. Everett Sawyer, Elizabeth City, secretary-treasurer.

"Doctor Webb of Horseshoe Bend."—The special telecast "Doctor Webb of Horseshoe Bend" which represents the daily activities and contacts of the average practitioner and was authorized by the Trustees at the December meeting, will go on WABC-TV, New York, Monday, January 22, 8:30-9:00 p. m. (E.S.T.). The production will be directed by Martin Magner, and Walter Hampden will be the star. Kinescopic copies will be made; these, together with scripts, will be available from the Bureau of Health Education, American Medical Association, 535 North Dearborn, Chicago, within a few days after the presentation. The copies are for use by any medical society where television facilities are available.

Genitourinary Surgeons Candidates.—The annual meeting of the American Association of Genitourinary Surgeons will be held at Skytop Lodge, Skytop, Pa., May 16-18. Names of candidates for membership should be in the hands of the secretary by February 10. A candidate's proposal should include a letter from the proposer, one from the seconder and such other letters of recommendation as may be submitted, together with a statement of the candidate's academic and medical degrees, hospital and teaching position and a list of his medical publications. Titles of papers to be presented at the meeting should be sent to the secretary as soon as possible. Contributions to the program will be accepted up to February 25 unless the program is filled before that time.

National Interprofessional Committee on Eye Care.—This committee, comprised of ophthalmologists, optometrists and opticians representing the various societies in their fields, held its first meeting in Chicago October 8 concurrently with the annual meeting of the American Academy of Ophthalmology and Otolaryngology. Officers were elected and agenda drawn up for discussion by the committee. Dr. Avery D. Prangen, ophthalmologist, Mayo Clinic, Rochester, Minn., was chosen chairman for the coming year, and Mr. Leslie Myers, Minneapolis, vice chairman. Carel C. Koch, Minneapolis, editor, *American Journal of Optometry*, and secretary of the American Academy of Optometry, was elected secretary. Problems discussed at this first session included, besides organization, interprofessional relations and topics related to improving the optical care offered the public by the several groups represented by the committee. The second meeting of the committee was scheduled for December 17 in Chicago to be held concurrently with the annual meeting of the American Academy of Optometry.

Changes in Board Requirements.—At a special meeting of the American Board of Obstetrics and Gynecology in Pittsburgh December 14, the following changes in the regulations of the board were unanimously adopted: (1) Physicians otherwise qualified, who were graduated before Jan. 1, 1939 and whose required training was in obstetrics or gynecology for at least five years immediately prior to application, will be accepted for examination as candidates for certification in either obstetrics or gynecology. In all other respects requirements for eligibility remain the same for those physicians graduated since 1939. Bilateral training is required as published in the *Bulletin* of the board. (2) Applicants who have been certified by one of the other American Specialty Examining Boards will not be eligible for certification by this board until they have relinquished the certificate previously conferred. (3) Since the vast majority of obstetrical and gynecological cases are nonoperative, the board requires adequate training in basic sciences, infertility, endocrinology, oncology, irradiation therapy, psychosomatic medicine, electrotherapy and other nonoperative methods of diagnosis and treatment as well as training in major operative procedures.

College of Allergists Meeting.—The American College of Allergists will hold its seventh annual meeting at the Edgewater Beach Hotel, Chicago, February 12-14. There will be section meetings: psychosomatic aspects of allergic diseases, under the leadership of Dr. Harold A. Abramson of New York; pediatrics, under Dr. Bret Ratner of New York; allergies of the nose and throat, under Dr. George E. Shambaugh Jr., of Chicago; allergic diseases of the skin, under Dr. Rudolph L. Baer of New York, and the allergic aspects of rheumatism and arthritis, under Dr. George E. Rockwell of Milford, as well as a general session of the college when hay fever, asthma and the newer drugs will be discussed under the leadership of Dr. John N. Mitchell of Columbus, Ohio, president of the college. The college is trying for the first time the experiment of offering its postcollegiate instructional course on the three days just preceding its annual meeting. The faculty consists of some 25 allergists. The course is designed for any physician who wants to learn the basic principles and diagnosis and treatment of allergic patients and technics. A fee of $35 will be charged for the three day course (February 9-11). Information may be obtained from Fred Wittich, M.D., Secretary-Treasurer, American College of Allergists, LaSalle Medical Building, Minneapolis.

Institute of Cancer Cytology.—An Institute of Cancer Cytology has recently been chartered with headquarters in New York. Dr. Arthur P. Stout, professor of pathology, Columbia University, New York, and member of the educational committee of the American Cancer Society, has been elected president. Vice presidents are Dr. Herbert F. Traut of the University of California Medical School, San Francisco; Dr. Emil Novak, Johns Hopkins Hospital, Baltimore; Charles D. Read, F.R.C.S., University of London, England; Dr. J. Ernest Ayre of the Cytological Laboratories of McGill University, Montreal, and K. Sheldon MacLean, New York. The key resolution passed unanimously at the meeting placed the institute on record as endorsing "Regional Cytology Centers" in order to make cytological tests for cancer widely available with the least possible delay not only to hospitals and clinics but to physicians and especially to those in outlying districts. Cytology would then play an important role in periodic health checkups and would make the family physician's office a more effective cancer detection clinic. Members of the Board of Directors in addition to officers are as follows: Dr. Axel N. Arneson, Washington University, St. Louis; Dr. F. Bayard Carter, Duke University, Durham, N. C.; Robert Chambers, Ph.D., New York University, New York; Dr. Seymour M. Farber, University of California, San Francisco; Dr. Paul F. Fletcher, St. Louis; Dr. Charles Galloway, Evanston; Dr. Paul Klemperer, Columbia University Medical School, New York; Dr. James B. McNaughton, University of Colorado, Denver; Dr. Thomas C. Peightal, Roosevelt Hospital, New York; Keith R. Porter, Ph.D., Rockefeller Institute for Medical Research, New York; Dr. Isador C. Rubin, Mount Sinai Hospital, New York; Dr. William E. Studdiford, New York-Bellevue Medical Center, New York; Dr. Howard C. Taylor Jr., Columbia University, New York; Dr. Richard W. TeLinde, Johns Hopkins Hospital, Baltimore; Dr. Philip D. Wilson, Hospital for Special Surgery, New York, and Dr. MacLean, executive secretary. His address is 135 East 65th Street, New York.

CORRECTION

Jerry P. Woodhall.—The name of the third author of the leading paper in THE JOURNAL, Dec. 9, 1950, page 1227, should have been Jerry P. Woodhall, M.D., and his address Macon, Ga.

Discussion by Dr. Hyman I. Goldstein.—In THE JOURNAL, Jan. 6, 1951, page 25, a part of the discussion credited to Dr. Walter M. Palmer should have been credited to Dr. Hyman I. Goldstein of Camden, N. J. Dr. Goldstein's discussion begins with the words, "In the *Archives of Internal Medicine*," in the twentieth line of the discussion credited on this page to Dr. Palmer, and continues to the end of the discussion credited

to Dr. Palmer. Furthermore, the word "angiomatosis" should have been spelled as it appears in this correction. The word "view" in the sentence, "I cited some cases with a view of the literature," should have been "review."

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 26-28. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

ALASKA:* Juneau, March 13. Qualified applicants may request a special examination in other towns where board members are located. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

ARKANSAS: * *Regular.* Little Rock, June 7-8. Sec., Dr. Joe Verser, Harisburg. *Homeopathic.* Fort Smith, June 7-8. Sec., Dr. Carl S. Bungart, 105 N. 14th St., Fort Smith. *Eclectic.* Little Rock, June 7-8. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Written.* Los Angeles, Feb. 26-March 1. *Oral.* Los Angeles, Feb. 24. *Oral and Clinical for Foreign Medical School Graduates.* Los Angeles, Feb. 25. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

CONNECTICUT: * *Examination.* Hartford, March 13-14. Sec. to the Board, Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic.* Derby, March 13-14. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

GEORGIA: Atlanta, June. Augusta, June. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Ex. Sec., Dr. John Y. Battenfield, Agana.

INDIANA: Indianapolis, June 20-22. Exec. Sec., Miss Ruth V. Kirk, 1138 K. of P. Bldg., Indianapolis 4.

IOWA: * *Written.* Iowa City, June 11-13. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

KANSAS: Kansas City, June 6-7. Sec., Dr. O. W. Davidson, 864 New Brotherhood Building, Kansas City.

KENTUCKY: Louisville, June 6-8. Sec., Dr. Bruce Underwood, 620 S. 3rd St., Louisville.

MAINE: Portland, March 12-13. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: Baltimore, June 19-22. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, June 19-20. *Examination.* Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, Jan. 23-26, 1951. Sec., Dr. Geo. R. Schadt, 37 State House, Boston.

MISSISSIPPI: Jackson, June. Asst. Sec., Dr. R. N. Whitfield, Jackson 113.

MISSOURI: *Examination.* Jefferson City, Feb. 19-21. *Reciprocity.* Jefferson City, Feb. 12. Ex. Sec., Mr. John A. Hailey, Box 4, Jefferson City.

MONTANA: Helena, April 2-4. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

NEBRASKA: * June 1951. Director, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln.

NEVADA: Carson City, Feb. 5. Sec., Dr. George H. Ross, 112 Curry St., Carson City.

NEW HAMPSHIRE: *Examination.* Concord, March 14-15. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NEW JERSEY: *Examination.* Trenton, June 19-22. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 10-11. Sec., Dr. Charles J. McGoey, Coronado Bldg., Santa Fe.

NEW YORK: *Examination.* Albany, Buffalo, Syracuse and New York City, Jan. 30-Feb. 2. Sec., Dr. Jacob L. Lochner, 23 S. Pearl St., Albany.

OHIO: *Endorsement.* Columbus, Jan. 23 and April 3. Sec., Dr. H. M. Platter, 21 W. Broad Street, Columbus.

OKLAHOMA: * *Examination.* Oklahoma City, June 6-7. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

PUERTO RICO: *Examination.* Santurce, March 6. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

SOUTH CAROLINA: *Reciprocity.* Columbia, Feb. 5, March 5, April 2. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

UTAH: Salt Lake City, July 1951. Dir., Mr. Frank E. Lees, 324 State Capitol Bldg., Salt Lake City 1.

VERMONT: Burlington, February 1951. Sec., Dr. F. J. Lawliss, Richford.

VIRGIN ISLANDS: St. Thomas, June 12. Sec., Dr. Earle M. Rice, St. Thomas.

WYOMING: *Examination.* Cheyenne, Feb. 5. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARKANSAS: *Examination.* Little Rock, May 8-9. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

COLORADO: *Examination.* Denver, March 7-8. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

CONNECTICUT: *Examination.* Feb. 10. Executive Asst., State Board of Healing Arts, Mr. M. G. Reynolds, 110 Whitney Ave., New Haven 10.

DISTRICT OF COLUMBIA: *Examination.* April 23-24. Sec., Dr. Daniel L. Seckinger, 4130 E. Municipal Bldg., Washington.

FLORIDA: *Examination.* Gainesville, June 2. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

OKLAHOMA: *Examination.* Oklahoma City, March 27. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, March 3. Sec., Mr. Charles D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: *Examination.* Providence, Feb. 14. Chief, Division of Professional Regulation, 366 State Office Bldg., Providence.

TEXAS: *Examination.* Latter Part of April. Sec., Bro. Raphael Wilson, 306 Nalle Bldg., Austin.

WISCONSIN: *Examination.* Madison, April 7. Sec., Mr. W. H. Barber, Scott and Watson Sts., Ripon.

---

* Basic Science Certificate required.

MEETINGS

ANNUAL CONGRESS ON INDUSTRIAL HEALTH, Atlanta Biltmore Hotel, Atlanta, Ga., Feb. 26-28. Dr. Carl M. Peterson, 535 N. Dearborn St., Chicago 10, Secretary.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE, Palmer House, Chicago, Feb. 12-13. Dr. Donald G. Anderson, 535 N. Dearborn St., Chicago 10, Secretary.

NATIONAL CONFERENCE ON RURAL HEALTH, Peabody Hotel, Memphis, Tenn., Feb. 23-24. Dr. F. S. Crockett, 535 N. Dearborn St., Chicago 10, Chairman.

AMERICAN ACADEMY OF ALLERGY, Hotel Statler, New York, Feb. 5-7. Dr. Walter S. Burrage, 208 E. Wisconsin Ave., Milwaukee 2, Secretary.

AMERICAN ACADEMY OF FORENSIC SCIENCES, Drake Hotel, Chicago, March 1-3. Prof. Ralph F. Turner, Michigan State College Dept. of Police Administration, East Lansing, Mich., Secretary.

AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS, Palmer House, Chicago, Jan. 27-Feb. 1. Dr. Harold B. Boyd, 122 S. Michigan Ave., Chicago 3, Secretary.

AMERICAN COLLEGE OF ALLERGISTS, Edgewater Beach Hotel, Chicago, Feb. 11-14. Dr. Fred W. Wittich, 423 LaSalle Medical Bldg., Minneapolis 2, Secretary.

AMERICAN SOCIETY FOR SURGERY OF THE HAND, Palmer House, Chicago, Jan. 26. Dr. Joseph H. Boyes, 1401 S. Hope St., Los Angeles 15, Secretary.

ATLANTA GRADUATE MEDICAL ASSEMBLY, Municipal Auditorium, Atlanta, Ga., Feb. 5-7. Mrs. Stewart R. Roberts, 768 Juniper St. N.E., Atlanta, Executive Secretary.

CENTRAL SURGICAL ASSOCIATION, Chicago, Feb. 22-24. Dr. James T. Priestley, Mayo Clinic, Rochester, Minn., Secretary.

CHICAGO MEDICAL SOCIETY ANNUAL CLINICAL CONFERENCE, Palmer House, Chicago, March 6-9. Dr. Walter C. Bornemeier, 30 N. Michigan Blvd., Chicago 2, Secretary.

INTERNATIONAL POST-GRADUATE MEDICAL ASSEMBLY OF SOUTHWEST TEXAS, Municipal Auditorium, San Antonio, Jan. 23-25. Dr. John J. Hinchey, P. O. Box 2445, San Antonio 6, Secretary.

MICHIGAN POSTGRADUATE CLINICAL INSTITUTE, Book-Cadillac Hotel, Detroit, March 11-13. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

NATIONAL CONFERENCE ON MEDICAL SERVICE, Palmer House, Chicago, Feb. 11. Dr. R. E. Fitzgerald, 2218 N. Third St., Milwaukee 12, Secretary.

NEW ORLEANS GRADUATE MEDICAL ASSEMBLY, Municipal Auditorium, New Orleans, March 5-8. Dr. W. D. Beacham, 1430 Tulane Ave., New Orleans 12, Secretary.

SECTIONAL MEETING, AMERICAN COLLEGE OF SURGEONS, Hotel Statler, St. Louis, Jan. 22-23. Dr. James Barrett Brown, 508 N. Grand Blvd., St. Louis, Chairman.

SOUTH CENTRAL BRANCH, AMERICAN UROLOGICAL ASSOCIATION, Hotel Adolphus, Dallas, Jan. 29-Feb. 2. Dr. Rex E. Van Duzen, 721 Medical Arts Bldg., Dallas, Chairman.

SOUTHEASTERN SECTION, AMERICAN UROLOGICAL ASSOCIATION, Peabody Hotel, Memphis, Tenn., March 7-10. Dr. Russell B. Carson, Sweet Bldg., Fort Lauderdale, Fla., Secretary.

DEATHS

Kopetzky, Samuel Joseph ⊕ New York; born in New York Aug. 1, 1876; Columbia University College of Physicians and Surgeons, New York, 1898; specialist certified by the American Board of Otolaryngology; instructor, diseases of the ear, New York Post Graduate Medical School and Hospital in 1905; clinical assistant, then assistant surgeon, and finally junior surgeon at the Manhattan Eye, Ear, Nose and Throat Hospital in the division of otology, where he remained until 1917; professor of otology, New York Polyclinic Medical School and Hospital, and director, department of otolaryngology at that institution since 1939; served as director of otolaryngology at Israel-Zion Hospital in Brooklyn; consulting otolaryngologist at Beth Israel Hospital in New York and consulting otologist at Nyack Hospital in Nyack, the Newark (N. J.) Beth Israel Hospital and past president of its board, Vassar Brothers Hospital in Poughkeepsie, N. Y., and the Jamaica (N. Y.) Hospital; member of the House of Delegates of the American Medical Association from 1930 to 1933 inclusive and from 1936 to 1941 inclusive; fellow of the New York Academy of Medicine and in 1933 chairman, section of otolaryngology, American College of Surgeons, and the American Academy of Ophthalmology and Otolaryngology; in 1925 president and from 1931 to 1940 chairman of special committee on publicity, Medical Society of the County of New York; in 1941 and 1942 president of the Medical Society of the State of New York, chairman of its committee on scientific work, 1926-1927, and of the committee on medical preparedness, 1940-1941, and speaker of the house of delegates from 1933 to 1938; received, in 1912, for his research work on meningitis, the gold medal of the American Rhinological, Laryngological and Otological Society, of which he was a fellow and from 1937 to 1938, president; president of the Metropolitan New York Chapter, Association of Military Surgeons of the United States; made a corresponding member, Societe de Larynogologie des Hospitaux de Paris; served in the volunteer infantry, Spanish-American War; during World War I, entered the medical corps of the U. S. Army as a captain; successively promoted to rank of major, lieutenant colonel and colonel; served in France with the 81st division and was cited for gallantry after the Argonne-Meuse offensive; awarded silver star decoration; awarded the conspicuous service cross for overseas service by the state of New York; colonel, medical reserve corps; in 1934 was designated Chevalier of the Legion of Honor by the French government for his collaboration with French scientists in his work on petrositis; on Oct. 15, 1940 ordered to active duty, with rank of colonel and assigned as director, medical division, Selective Service Administration, New York City area; in 1946 decorated, Legion of Merit, by the President of the United States; received the Distinguished Service Cross from Governor Dewey at the termination of service; at the end of five years and six months' service was retired as a colonel; a Companion, Military Order of the World War, and member of the New York Society of Military and Naval Officers of the World War; in 1930 member of the Noise Abatement Commission, City of New York; one of the founders and for many years managing editor of the *New York Medical Week;* member of the editorial staff and literary chairman of the *New York State Journal of Medicine* from 1935 to 1940; author of "Surgery of the Ear" (1908), "Otologic Surgery" (1925, second edition 1929) and "Deafness, Tinnitus and Vertigo" (1948); wrote many articles and monographs on medical topics relating to otolaryngology in *War Medicine,* Jackson and Jackson's book "Diseases of the Nose, Throat and Ear" and Fowler's Loose-Leaf "Medicine of the Ear"; edited a looseleaf book, "Surgery of the Ear," in 1938; died November 13, aged 74, of coronary disease.

⊕ Indicates Fellow of the American Medical Association.

Allen, John D ⊕ Louisville, Ky.; University of Louisville Medical Department, 1912; specialist certified by the American Board of Pathology; member of the College of American Pathologists; past president of the Jefferson County Medical Society; affiliated with Kentucky Baptist Hospital, where he died October 15, aged 66, of coronary occlusion.

Anderson, William Dulaney, Norton, Va.; University of Virginia Department of Medicine, Charlottesville, 1915; member of the American Medical Association, the Tennessee State Medical Association and the American Trudeau Society; specialist certified by the American Board of Pediatrics; served overseas during World War I; formerly on the staff of the T. C. Thompson Children's Hospital and affiliated with Baroness Erlanger Hospital and Pine Breeze Sanatorium in Chattanooga, Tenn.; died in Norton General Hospital October 25, aged 58.

Ausplund, Andres Albert, Portland, Ore.; Willamette University Medical Department, Salem, 1894; died December 1, aged 84, of arteriosclerosis.

McCreery, John Wilson, Akron, Ohio; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; died recently, aged 80, of heart disease.

Paine, Ruby Helen ⊕ Berea, Ky.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1912; formerly a medical missionary in Africa; served on the staffs of the State Hospital in Cherokee, Iowa, and the State Hospital in Rochester, Minn.; since 1927 affiliated with Berea College Hospital; killed near Marshall, N. C., November 3, aged 67, in an automobile accident.

Parent, John Wilfrid, Van Buren, Maine; Jefferson Medical College of Philadelphia, 1924; formerly an officer in the U. S. Navy; served as chairman of the board of selectmen of Van Buren and with the health and welfare department; died suddenly recently, aged 51.

Szappanyos, Bela Theodore ⊕ Detroit; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1918; on the staffs of Providence and Mount Carmel hospitals; died October 17, aged 54, of myocardial infarction.

Wakeman, Bertis Rupert, Clearwater Beach, Fla.; Long Island College Hospital, Brooklyn, 1893; member of the American Medical Association and the Medical Society of the State of New York; state health officer of the Rochester (N. Y.) district for many years; health officer of the City of Hornell from 1895 to 1910 and from 1917 to 1923; retired from state service in 1936; formerly on the staff of St. James Mercy Hospital in Hornell, N. Y.; died October 26, aged 83, of hypostatic pneumonia.

Wieseler, Rudolph John, Sioux Falls, S. D.; Creighton University School of Medicine, Omaha, 1938; member of the American Medical Association; served during World War II; on the staffs of Sioux Valley Hospital and McKennan Hospital, where he died October 11, aged 37, of carcinoma.

Wittels, Fritz ⊕ New York; Medizinische Fakultät der Universität, Wien, Austria, 1904; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychoanalytic Association and American Psychiatric Association; died October 16, aged 69, of heart disease.

Woolf, Victor Felsenthal ⊕ Staten Island, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1930; certified by the National Board of Medical Examiners; specialist certified by the American Board of Internal Medicine; member of the American Trudeau Society; associated with the Veterans Administration; served on the staffs of Lenox Hill, Sydenham and Bellevue hospitals, all in New York; died in New York October 16, aged 47.

FOREIGN LETTERS

PARIS

Fifth International Congress on Cancer.—This congress was held in Paris at the Sorbonne July 16-22, 1950. Almost 1,000 members attended, including 120 delegates representing 45 nations. The opening meeting took place in the presence of the president of the French Republic. There were 30 colloquies of 20 minutes each, followed by a discussion led by the president of the meeting, and 170 communications of 10 minutes each, followed by free discussion.

RESEARCH

Professor Oberling (Paris), in his report on the morphological features of the cancerous cell, emphasized that Gasperson and Brachet's methods of cytological study yielded more information than the histological method used in certain neoplasms. Studies with the electron microscope can be made on cells cultivated in vitro or on isolated cancerous cells, such as are found in pleuritic and ascitic effusions. In Rous' sarcoma, in some tumors of the rat and man and in leukemia, Oberling found elements described by Claude and his associates; they are definitely different from microsomes. In his microscopic study on the cancerous cell, V. Albertini emphasized the contrasts between the structural richness of the nuclei and the pronounced impoverishment of cytoplasm, as well as on the frequent existence of "naked nuclei."

C. Menkes, P. Rentchnick and S. Steen (Geneva) presented a new method for diagnosis of malignant tumors, based on the fact that pentose added to blood serum in vitro is removed if the latter comes from cancerous persons, whereas it is not attacked if the serum is from normal subjects or from persons with other diseases. The result of his test was correct in 95 per cent of 200 cases of tumors of various types and location; after elimination of causes of error, results were correct in almost 100 per cent. In 42 of 44 normal persons this result was exact; in 124 noncancerous diseases, the response was correct in 88 per cent of cases. The pentolysis test proved more reliable than determination of the acid phosphatase rate in cases of adenoma and carcinoma of the prostate.

The mode of action of cancerogenic agents on the cell gave rise to numerous reports. Professor Haddow (London) has studied the mutagenic action of nitrogen mustards and epoxides; he stated that in this series, for the first time, a correlation seems to exist among the chemical properties of the carcinogenic molecule, the chemical properties of the specific areas, the cytological effects and the genetic consequences resulting for the cells. F. Meersemann and J. Maisin (Liège) studied the question of the carcinogenic effect of diethylstilbestrol. They tried to provoke cancer of the breast in a pure race of rats (with no spontaneous tumors) by subcutaneous implantation of cholesterol and diethylstilbestrol. There were no occurrences of cancer of the breast or of the bladder, despite the presence of calculi in the latter. However, a significant number died of adenoma of the hypophysis. R. Moricard and Gothie (Paris) used female guinea pigs to study the inconsistency of the production of genital and extragenital myomas after administration of estrogens. Of 15 noncastrated normal animals treated with 1 mg. of estradiol benzoate per week for five to 32 weeks, 13 had multiple myomas; 11 animals deficient in vitamins A and C had no myomas; four of five animals given overdoses of vitamin C (100 mg. per week) had myomas; in the animals given overdoses of vitamin A (2 to 5 mg. per week) one myoma was noted, but pleural fibrosis occurred in several; the dose of estrogen was the same in all instances.

CLINICS

Professor Huguenin described two types of bronchial tumors: (1) malignant tumors, which were divided into (*a*) histologically characteristic epitheliomas and (*b*) sarcomas (occurring rarely), and (2) clinically benign tumors, with (*a*) histologically benign types and (*b*) epitheliomas. Bergstrand (Sweden) proposed two classifications of these tumors: (1) a histopathological classification, differentiating epithelial tumors, mesenchymal tumors, bronchiomas and chondromas, and (2) a classification based on the site of the tumor.

TREATMENT

H. Redon (Paris) presented an important work, a study of 192 tumors of the parotids. In mixed tumors total parotidectomy with conservation of the facial nerve was performed. In the "various" tumors limited ablation was done when histological diagnosis was confirmed in the course of surgical intervention. In the absence of an absolutely certain diagnosis, a total parotidectomy was routinely performed. The importance of this decision, at first an empirical one, was confirmed later by the multiplicity of tumor foci in 30 per cent of the cases. In cancer cases, according to the degree of evolution, a total parotidectomy (usually with the sacrifice of nerves) or a more extensive operation was done. The operation was always completed with radium or roentgen rays. In cases of mixed tumors (34 cases followed five to 15 years) the authors noted no relapse. Relapses occur early; after five years they are rare. In case of cancer, results remain unsatisfactory. Portmann (Bordeaux) described the excellent results obtained by surgical treatment alone or in conjunction with radium therapy in deep malignant tumors of the face, even with invasion of the orbit and of the zygomatic fossa. There is little mutilation, the normal appearance of the face being restored by closure of the superficial wounds. Moulonguet and Mallet (Paris) reported the results in 76 cases of cancer of the floor of the mouth and gingivomandibular cancer obtained with intrabuccal diathermocoagulation in a single operation with general anesthesia. The operation is associated with the ligation of the external carotid, which affords perfect protection against hemorrhage (a danger from the tenth to the twelfth day). At the same time, the author makes routinely an extensive lymph node dissection. In 76 operations, dating from 1920 to 1945, recovery occurred in 23.6 per cent. In hypopharyngeal cancer, results of radiotherapy were not very encouraging. Leroux-Robert, A. Annuyer and Calle (Paris) therefore tend to do a laryngopharyngectomy, followed in one month by radiotherapy, 4,000 r in 70 days in two cervical fields (right and left). The use of antibiotics permits operation in one stage and almost without postoperative mortality. Results in more than 50 patients treated in this way since 1940 are encouraging; four are cured without relapse (from three years and nine months to nine years), 17 have been followed for more than three years, seven had relapses and 13 died from intercurrent disease.

In 600 cases of superficial epitheliomas of the skin and mucosa, O. Dufresen and G. Pinsonneault (Montreal) have used contact therapy, consisting in a single dose of about 4,000 r in 100 to 120 seconds, the irradiation largely extending beyond the lesions. This simple technic results in recovery in most cases. If after two months recovery seems doubtful, the same dose is repeated with smaller sites, restricted to suspected areas. R. Darget (Bordeaux) reported on 180 cases of malignant tumor of the bladder treated with radium, obtaining 38 to 40 per cent successful results. In tumors of the deep region of the bladder total cystectomy, a serious operation, not always acceptable to the patient, is, according to Darget, to be performed only when radium therapy is not practicable.

The items in these letters are contributed by regular correspondents in the various foreign countries.

P. Ulrich (Paris) discussed the problem of hormone therapy in cancer of the breast, which may perhaps be explained by a prolonged (female-male) humoral inbalance. Restoration of balance may constitute the ideal prophylaxis against cancer of the breast and, eventually, cancer in other sites. Androgens and estrogens have an inhibitory effect on the anterior pituitary body, hyperfunction of which may result in "cancerous diathesis." The author is studying the possibility of inhibiting the hyperfunctioning of the pituitary by roentgen rays, short waves or surgical treatment of the cervical sympathetic.

L. Mallet and R. Decker (Paris) reported the advantages of transvaginal roentgen therapy with multiple portals in cancer of the cervix uteri. The tolerance of the rectal and cervicovaginal mucosa permits a total dose of about 15,000 r and extension of a course of treatment to one to two months, as against 10 to 15 days with radium. The authors used this method with roentgen therapy for an external lesion or with surgical procedures. P. de Plaen (Brussels) discussed beta rays in the treatment of limited cancers; during a short period of time, intensive radiation, of limited depth, is obtained. On the basis of 200 cases, J. Baud and Curtial (Curie Foundation, Paris) discussed the value of peripelvic roentgen therapy with 500 kv. and 1 M. distance associated with intracavitary radium therapy in cancer of the cervix uteri. The authors stressed that this increase in distance increases the efficiency in depth more than the high voltage does. For stage I and II epitheliomas an anterior and a posterior field, with lateral fields in stage III, are used.

A Jentzer and P. Wenger (Geneva) studied the distribution of radioactive colloidal gold in the human organism by peritoneal injection in a case of inoperable generalized carcinomatosis. After five days, 75.6 per cent of the activity remained concentrated in the injection area; 24.4 per cent was fairly equally spread in the body with greater concentration in the spleen and the kidneys. The distribution was probably effected through the lymphatic system as shown by the increased activity of lymph nodes, especially of the diseased nodes. The authors deem it necessary to supplement the action of the radioactive colloidal gold with radiologic or surgical treatment in cases of extensive tumors.

As stressed by Dustin, up to the present time chemotherapy has produced only remissions. The antineoplastic substances act on the cellular division, but, as cancerous cells have lost a part of their cellular specificity, it is difficult to reach the cancer cells without damage to normal cells. Shear (Bethesda, Md.) reported results of an experimental study of 2,000 chemical agents used in mice, about 100 of which are of interest.

Clemensen (Denmark) emphasized the various methods of gathering material for statistical studies related to cancer. Firket and Damiean-Gillet (Liège), in a statistical study of cancer in young persons and the age incidence of sarcoma, reported on 218 cancers (histologically proved in children up to 15 years of age); 63 per cent of the lesions were sarcomas, 20 per cent embryonic tumors and 17 per cent epithelial tumors. In 290 patients in the 16 to 25 age group the respective rates were 56, 4 and 40 per cent. The total morbidity curve for the group up to 15 years of age was depressed about the fourth year, remained constant from the fifth to the tenth year and rose thereafter. In a controlled population group, they noted that in 763 cases of sarcoma the morbidity increased from birth to 16 years, remained constant from 17 to 23 and increased thereafter. Simon and Delcourt (Brussels) studied the age of appearance of cancer in successive generations. A cancerous morbidity in the ascendants was noted in 872 cases; in 153 cases cancer appeared at the same age (average 60 years) in the ascendant and the descendant: in 119 cases the ascendant was younger, and in 600 cases the ascendant was older (average age of the descendant 50 years). In several families it was possible to follow three generations in which cancer, not always of the same type, appeared at an early age. In 70 per cent of cases there was evidence of a cancerous predisposition, since the disease became noticeable at successively lower ages.

BRAZIL São Paulo.

Kartagener's Triad.—Prof. João Alves Meira, of Faculdade de Higiene e Saúde Pública, and Dr. José Maria Ferreira, assistant of the Medical School of São Paulo, published a case in which complete transposition of the viscera was associated with sinusitis and multiple bronchiectasis (Kartagener's triad). The patient, a 21 year old man observed for 14 months, died, despite intensive treatment, of cerebral abscesses. He was admitted to the hospital with a clinical picture of bronchopulmonary suppuration. The diagnosis of multiple infected bronchiectasis was made from the roentgenogram of the chest and from bronchoscopic and bronchographic observations. Sinusitis was suspected clinically and confirmed by roentgen examination and sinus drainage. Physical examination revealed dextrocardia, confirmed by roentgen and electrocardiographic studies. The transposition of the stomach, duodenum and large intestine was also verified roentgenographically. In addition, during life the diagnosis of intestinal schistosomiasis was made by rectal biopsy and skin test. The complement fixation test revealed the presence of Chagas' disease. Necropsy confirmed the clinical and laboratory diagnoses. There was complete transposition of the viscera (heart and great vessels, lungs, liver, spleen, pancreas, stomach, intestines); abscesses were found in the brain, and bronchopulmonary changes (bronchopneumonia areas and multiple bronchiectasis) and paranasal and frontal sinus infection were observed. The spleen was represented by eight isolated nodules, the largest of which was spleen shaped. The microscopic sections of myocardium showed myocarditis of a nonspecific type (Leishmania forms of Trypanosoma cruzi were not found). Ova of Schistosoma mansoni were found in the large intestine and in the liver.

Meningitis Due to Escherichia Coli.—At a meeting of the Associação Paulista de Medicina, Dr. Moyses Cutin reported on a 7 year old girl with otogenic meningitis due to Escherichia coli, who, despite intensive treatment with sulfadiazine, streptomycin and penicillin, and a radical operation, did not improve. The adjunctive use of chloramphenicol effected rapid improvement. Dr. Cutin discussed the experimentally and clinically observed resistance of the organisms to antibiotics and the necessity for combined antibiotic therapy.

ECUADOR Quito

Annual Medical Meeting.—The Asociación Médico-Quirúrgica of Quito held its seventh annual medical meeting in Quito on December 11-17. Papers on clinical medicine and surgery were read, and there were reports of results of clinical work done in hospitals and clinics of Ecuador in the last year. Speakers were Drs. Gerardo Rodríguez, biostatistical data on Quito City; Luis Rendón, studies of leprosy in the Azuay, Loja and El Oro provinces; Abel Alvear, statistics on the campaign against rabies in Ecuador; Germán Jaramillo, analysis of statistics on surgical operations done in the department of otorhinolaryngology of the San Juan de Dios Hospital. Jorge Vallarino, analysis and statistics on epidemics in patients treated in the Hospital de Niños "Baca Ortiz"; Teodoro Salguero, treatment of congenital dislocation of hip joint; César Benítez, technic of retropubic prostatectomy in 10 cases; C. Bustamente, surgery of the gallbladder; C. Prado, problem of strangulated recurrent hernia and operative technic; A. Zambrano, problem of pterygium, with special reference to modification of operative technic; E. Bejarano, anatomicopathological studies on dystrophy and fatty liver in infants. L. A. León, leishmaniasis: report of a case of 13 years' duration; A. de la Torre, differentiation in diagnosis of cholecystopathy, cholopathy and appendicopathies as made in Ecuador; G. Fisch, toxicosis in infants observed in the Baca Ortiz Hospital.

CORRESPONDENCE

FOOD AND ALLERGY

To the Editor:—In regard to the article "Importance of Foods in Patients as Determined by Skin Testing and Intentional Feeding," by Leibowitz, Chester and Markow (J. A. M. A. **144:** 990 [Nov. 18] 1950), I feel that in two respects there is a possibility for more precision in the study.

1. Skin tests must be done in more than one dilution in order to rule out the possibility of a positive cutaneous reaction. This idea was first suggested in Coca, Walzer and Thomman's "Asthma and Hayfever in Theory and Practice" (Springfield, Ill., Charles C Thomas, Publisher, 1931). In the section on atopens and other excitants, the authors state that for intracutaneous testing a solution containing 0.0001 or 0.001 mg. per cubic centimeter may be employed "to *start* with, depending on the age of the patient and the degree of clinical sensitivity reported in the history. Stronger solution may be used subsequently if necessary." This testing dilution is purely a safety factor; the patient's cutaneous sensitivity is not always elicited by this dilute testing extract. This is also done with respect to pollens and other inhalants; patients often react only to the more concentrated extracts and fail to react to the weaker testing strengths of these extracts. To emphasize this point I wish to call to attention the routine testing series as used in the New York Post Graduate Hospital Allergy Clinic and included in the book by Robert A. Cooke (Allergy in Theory and Practice, Philadelphia, W. B. Saunders Company, 1947). Series 1 consists of "weak inhalants" testing at a strength of 100 protein nitrogen units; the "stronger inhalants" are used in fivefold or tenfold strengths, resulting in 500 or 1,000 protein nitrogen units. This observation regarding the necessity of testing with a more concentrated solution (sufficiently diluted so that it will not produce nonspecific reactions). is evidently becoming more accepted in regard to the inhalants, but apparently the realization that it is equally necessary in regard to the foods in which a high dilution is used in the initial test to prevent constitutional reactions has not been recognized. I often find that after testing with the usual strengths of foods, especially the ones that require high dilutions, negative reactions may occur, but on retests these foods with more concentrated extracts, positive reactions are elicited. The extracts to which I particularly refer in this article are mustard, eggs, almond, cod fish and peanuts. I see nothing under the procedure that would indicate that these patients were tested with more than one strength of extract, nor did I note that retesting was attempted with a more concentrated extract after clinical sensitivity was elicited on intentional feedings in the absence of positive results in skin tests. This step was essential, I feel, to permit the authors to reach their conclusions. To further quote from Coca, Walzer and Thomman, under "Atopens and Other Excitants" dilutions recommended for testing with fish consist of 0.01 to 0.1 mg. of nitrogen per cubic centimeter, which again would indicate a range for skin testing and not one single test; likewise, with respect to nuts the range suggested for skin testing is 0.005 to 0.05 mg. of nitrogen per cubic centimeter; for mustard the range is 0.001 to 0.01 mg. of nitrogen per cubic centimeter.

2. Intentional feeding at its best is an inaccurate method for the determination of clinical sensitivity unless the reaction occurs soon after the ingestion of the suspected food. After 24 hours, the causative effect of the suspected food is open to question. In the procedure outlined in the article, the food was eaten in quantity three or four times in the day prior to the subject's return to the clinic. This test would have been improved on if the time interval between the ingestion and the onset of symptoms had been stated, because reactions that occur up to about three hours after the ingestion of food are definitely connected with the suspected food. After this period there is increasing doubt as to the relation between the food and the symptoms observed. On the other hand, if a patient wheezes a great deal of the time, it is doubtful that the particular attack is due to the ingestion of the food given in the course of intentional feeding.

The authors should be congratulated on their attempt to settle the problem of the relation between respiratory allergy, food sensitivity and the diagnostic importance of cutaneous tests. It is my impression, however, that this problem will not be decided by statistical methods but by consideration of carefully studied cases.

VICTOR L. COHEN, M.D.,
341 Linwood Avenue,
Buffalo.

To the Editor:—The excellent article by Leibowitz and his co-workers (J. A. M. A., Nov. 18, 1950) clarifies much of the confusion that exists on this subject. In any investigation of this kind, two points should be stressed, which, according to my experience, constitute the key to the problem: Sensitivity to food, as indicated by feeding experiments and by skin tests, is subject to frequent change. Furthermore, the reliability of skin tests hinges on the freshness of the extracts employed in the tests. For obvious reasons all extracts used in a clinic or office cannot be prepared at the same time; some are older and, therefore, less potent than others. This undoubtedly explains the fact that the authors obtained only minor skin reactions to nuts and fish. This is in contrast to their results from feeding these foods and to the observations of other allergists in intradermal testing.

The authors' conclusion that food is of minor significance in respiratory allergy was first clearly demonstrated in a study by Waldbott, Blair and Ackley (On Evaluation of the Importance of Fungi in Respiratory Allergy, *J. Lab. & Clin. Med.* **26:**1593, 1941). Among 841 patients with respiratory allergy our index of the skin reactivity for food was 0.38 as compared with 0.84 for pollen, 0.36 for fungi and 0.64 for other inhalants. This was based on the results of intradermal testing.

The authors' reference to the article by Waldbott, Shea and Harrington might be somewhat misleading to the reader, since it implies that we disregarded food entirely. Actually, we demonstrated that food did cause ill effects in 12 per cent of our patients with severe asthma when they ate foods to which they were found to react on skin testing. In some instances, the reactions following the ingestion of the offending food were very severe. The conclusions reached in our two papers are, therefore, in full accord with the data brought out by the authors, namely, that skin tests can generally be relied on and that food does play a minor part in respiratory allergy.

GEORGE L. WALDBOTT, M.D.
602-4 Professional Building,
Detroit 1.

To the Editor:—The paper by Leibowitz, Chester and Markow is of the utmost interest. However, its conclusions that intradermal skin tests for food allergy conformed to clinical tests "in 35 per cent of all patients" contradict the findings of the authors. This ratio was found not in all patients, but in a group of 70 of them selected in a way which the authors omitted telling. In fact their findings are entirely different. For instance "Lettuce . . . yielded but one positive feeding test of 31 feeding tests completed . . . Milk, egg and wheat yielded only three positive tests in 57 trials." The only possible conclusion is that skin tests for food allergy, so questionable from the scientific point of view, have no practical value.

LEON BABALIAN, M.D.,
38 Deering Street,
Portland, Maine.

This letter was referred to Dr. Harry Leibowitz who replied:

To the Editor:—In answer to the letter commenting on our article in the November 18 issue of THE JOURNAL, we wish to make the following comments. The article states specifically, that all patients in the clinic who were undergoing hyposensitization therapy in the treatment of bronchial asthma and allergic rhinitis were included in this study. However, as was stated, only 70 patients cooperated sufficiently and gave sufficient data to be included in this report. In our conclusions, the last sentence of the fifth paragraph states, "In 35 per cent of all patients the positive skin test was confirmed clinically." In reading the entire paragraph, however, it will be noted that this statement refers to 35 per cent of the 70 patients involved in this study.

As regards the individual foods, positive clinical trials were obtained in 3.1 per cent of 2,467 trials made. These positive trials were distributed among 28 (35 per cent) of the 70 patients under study. It is apparent that many foods failed to yield any clinical confirmatory results while others yielded one to five positive results. The fact that this occurred in 35 per cent of the patients under study does not imply that each food, necessarily, was clinically confirmed in 35 per cent of the clinical trials. Hence, the chart showing the incidence of confirmation for the various foods studied contains such few positive results. Our conclusion that skin tests with foods is a useful diagnostic procedure is valid, since only 1.9 per cent were clinically positive in the presence of negative reactions to skin tests.

The diagnostic value of skin tests depends on the value of the information derived from this procedure. Food allergens yield many positive skin reactions that cannot be confirmed clinically, and these tests would appear to be of little value. The fact that only 1.9 per cent of the negative skin tests yielded positive clinical trials indicates that skin testing is not at fault even though only 4 per cent of the tests yielded clinical confirmation. There are many examples of positive reactions with pollens and inhalants that cannot be confirmed clinically, yet the skin test with these allergens is still considered a valuable diagnostic procedure. Since we state that foods were not the sole cause of symptoms in any of the 70 patients studied, the elimination of the clinically confirmed foods yielding positive skin reactions did not result in complete relief of symptoms. However, in those instances in which a positive reacting food yielded clinical confirmation, the value of such information was of importance in the management of the patient. The importance of the skin tests with foods will depend on the use made of the information obtained with the diagnostic procedure.

HARRY LEIBOWITZ, M.D.,
511 Avenue F,
Brooklyn 18.

MATERNAL DEATHS

To the Editor:—The editorial "Maternal Deaths—One in a Thousand" in THE JOURNAL of Nov. 25, 1950, calls attention to an important advance in medicine. The listed causes for this great progress are (1) the use of antibiotics as well as sulfonamides and whole blood derivatives, (2) prenatal care of health and diet of the mother, (3) antiseptics and general cleanliness and (4) improved undergraduate and postgraduate medical training in obstetrics.

All these factors are significant in reducing morbidity and mortality. Roentgen cephalopelvimetry is one more outstanding factor that has definitely contributed to this improvement. To date my co-workers and I made about 15,000 such studies. These are done in most instances about two weeks before the estimated delivery date. Patients may be classified by this method into three groups: (1) those with definite cephalopelvic disproportion, (2) those with borderline problems and (3) those with no evidence of disproportion or other abnormality. Thus, physicians are prepared to make decisions before labor. Difficult conditions may be cared for before trouble begins. The physician with less experience can dispose of difficult cases by calling in the expert.

I have no doubt that by this study numerous patients have been saved from an unnecessary and dangerous trial of labor which may have resulted in maternal death. This statement is made with knowledge of the fact that in the early days of roentgen pelvimetry deaths did occur in such cases. Roentgen cephalopelvimetry also contributes to reduction of infant mortality and morbidity. The state institutions hold many inmates who are there because of brain injury during childbirth. The cost is great. It is my considered opinion that roentgen study has reduced infant brain injury at birth by improving obstetrics. Not only is the saving in millions to the country; it is helping to reduce mental deficiency.

WILLIAM SNOW, M.D.,
941 Park Avenue,
New York 28.

Unquestionably roentgen cephalopelvimetry has played a role in the reduction of maternal mortality. This role is included in the concept of prenatal care. The editorial states, "A second factor is the development of a concept of prenatal care which stresses early diagnosis of some of the conditions which formerly contributed to death." One could not mention in the confines of an editorial all the improved technics that take part in prenatal care.—ED.

RELIEF OF PRICKLY HEAT WITH VITAMIN C

To the Editor:—In the early months of World War II, common prickly heat (miliaria, miliaria rubra, lichen tropicus, sudamina) caused almost universal distress among our troops on some of the constantly hot, humid South Pacific islands. The intense itching, paresthesias and burning interfered with concentration and with sleep, while secondary infection of excoriated areas at times caused temporary disability. The same skin disorder in milder form occurs widely in this country during hot weather, particularly in infants. In attempting to clear or alleviate this disorder in the Pacific, I tried all the available lotions and medicaments of possible aid, changes of clothes and soaps, with no noticeable effects. Large doses of multiple vitamin capsules and vitamin A and D capsules had no effect, but large doses of crystalline vitamin C in tablet form (300-500 mg. daily) gave dramatic relief to most patients. The itching cleared and the rash subsided, usually within half an hour, the effects lasting six to 24 hours. Because of technical difficulties, blood or urinary levels of the vitamin could not be determined. However, none of the men exhibited signs of clinical ascorbic acid deficiency.

During the summer of 1950 Drs. Ralph E. Pawley and Charles A. Berry of Coachella, Calif., a community bordering on the desert, were asked to test the effect of large doses of vitamin C on patients with prickly heat. A number of adults received 500 mg. a day orally, while several infants, 8 pounds (3,629 Gm.) or under in weight, received 100 mg. Itching was relieved and the rash cleared. None of these patients exhibited signs of clinical vitamin C deficiency.

It is known that the body has limited stores of vitamin C, and there is evidence that moderate deficiency may impair health, in the absence of the classic signs of scurvy (King, C. G.: Vitamin C, *J. A. M. A.* **8**:563 [Feb. 25] 1950). In regard to dietary intake, all troops in the Pacific were theoretically receiving adequate vitamin C in the tinned fruit juices, vitamin C fortified synthetic lemonade and the stored cabbage and onions received in rations. However, it is known that vitamin C is heat labile, and exposure to environmental heat may have diminished the vitamin content. Also, many of the men tired of and did not take the preparations containing vitamin C. Furthermore, as Wright and MacLenather (Excretion of Vitamin C in the Sweat, *J. Lab. & Clin. Med.* **24**:804 [May] 1939) have shown, periods of excessive sweating may be associated with loss of vitamin C through increased utilization in the tissues owing to increased body metabolism.

In summary, synthetic vitamin C given orally in large daily doses—500 mg. to adults, 100 mg. to small infants—relieved the itching and paresthesias and cleared the rash of prickly heat in patients on humid, hot tropical islands and in a dry, hot desert area. No mention of this use of vitamin C could be found in the literature.

ROBERT L. STERN, M.D.,
444 North Bedford Drive,
Beverly Hills, Calif.

MEDICAL MOTION PICTURES

Principles of Penicillin Therapy. 16 mm., color, sound, showing time 20 minutes. Produced in 1950 by Bray Studios, Inc., New York. Procurable on loan from E. R. Squibb and Sons, 745 Fifth Ave., New York 22.

This motion picture emphasizes the importance of three basic principles of penicillin therapy: 1. The infecting bacteria must be susceptible to the action of penicillin. 2. They must be reached by adequate concentrations of the antibiotic. 3. Therapy must be continued over a period sufficient to eradicate or suppress the organisms. In application, these principles require knowledge of the bacteriology, pharmacology and pharmaceutical forms of penicillin. The basic principles and the necessary knowledge to apply them are presented as well as the characteristic actions of various penicillin preparations. These preparations include crystalline potassium penicillin G as the injectable salt, tablets, troches, ointments and a micropulverized powder for inhalation. The modes of administration and the effects of penicillin therapy on infections and infectious diseases are illustrated.

The film left the impression that penicillin has a much wider range than it does, and it discussed the particulars of inhalation but did not show the technic. Some authorities might also question the statement that cases of sensitivity to the agent are rare. The picture deals with a subject that is well known and for that reason would not be of much interest to practicing physicians. It would be useful as a teaching film for medical students and nurses if augmented by general instruction on chemotherapy. The photography is excellent and the narration good. Some of the animation in the early portion of the film is rather poorly done. A 79 page booklet accompanies the film.

Hospital Food Service Personnel Training (Part III): Equipment. 16 mm., sound, black and white, showing time 14 minutes. Produced in 1950 by the United States Army. Procurable on loan from the Army Surgeon of the Army area in which the request originates.

In hospital food service, the task of keeping things clean never ends. The ever present danger of food poisoning is too great to permit the slightest relaxation in the vigilance of cleanliness. This motion picture stresses the importance of keeping equipment clean in hospital kitchens. A chef is seen explaining to a new employee how a careless cook who neglected a small sore on his hand was responsible for an outbreak of food poisoning among hospital patients and personnel. He then goes on to explain the proper rules for the cleaning of equipment: (1) loosening dirt, (2) dissolving or emulsifying dirt, (3) rinsing and (4) drying. The film actually illustrates methods of cleaning and indicates the places in equipment where bacteria may lodge and grow. The importance of thorough rinsing of the cleaning materials after use is also explained. Throughout the film, the words "Clean tools are basic to clean operations with food" are emphasized.

From a production standpoint, the film is not as well done as previous films of the series. This motion picture is highly recommended to hospital administrators and restaurant operators for showing to their kitchen employees. It would also be of interest to schools of dietetics, health officers and workers in public health. The photography and narration are very good.

The Fight Against the Communicable Diseases. 16 mm., color, sound, showing time 19 minutes. Produced in 1950 by and procurable from United States Public Health Service, Communicable Disease Center, 605 Volunteer Building, Atlanta 3, Ga.

This is a documentary film depicting the mission, facilities, and activities of the Communicable Disease Center with the expressed purpose of orienting new personnel of the Center in these activities. The motion picture points out that training is one of the important forms of assistance rendered by the Center and covers such fields as water supply, stream pollution, sewage disposal, housing, laboratory procedures, mycotic diseases and sanitary engineering. Training centers are strategically located throughout the United States and are attended by state and local health personnel and by students from many foreign countries. Training, facilitated by all types of audiovisual aids, is carried on at all levels in the diagnosis, prevention and control of communicable diseases.

This film will be most useful for the illustration of certain aspects of disease control procedures as a means of stimulating development of environmental sanitation programs. Its greatest application is in the orientation of boards of health, county commissioners and others who are directly concerned with local problems of public health administration. The photography and narration are well done.

Fun in Food: 16 mm., color, sound, showing time 9 minutes. Prepared by Frances Stern, Chief of Food Clinic, Boston Dispensary. Produced in 1941 by and procurable from Gateway Productions, Inc., 1859 Powell Street, San Francisco 11.

This motion picture is meant to be a presentation of the food constituents, their sources and their functions, calculated to impel one to think more in terms of a balanced diet. For example, the common sources of calcium are shown, then a visual comparison is made between the value of calcium to our bones, the foundations of our bodies, and the value of calcium to concrete, the foundations of buildings. Care has been taken to illustrate the material with foods in varying budget levels. It would have been more acceptable to say that vitamins are present in all fruits and fresh vegetables and then go on to cite specific sources of various vitamins such as oranges for vitamin C. It was stated that beets, carrots and turnips are sources of carbohydrates, whereas these foods are relatively low in carbohydrates.

Technically, this is an inferior production. The lighting and color are of uneven quality, as is the sound. It is poorly organized and contributes little to a teaching program on the subject. There are many other films on this level and subject which do a much better teaching job.

Aortic Pulmonary Anastomosis for Pulmonary Stenosis. 16 mm., color, silent, showing time 27 minutes. Prepared by Willis J. Potts, M.D., Stanley Gibson, M.D., and Sidney Smith, M.D., The Children's Memorial Hospital, Chicago. Produced in 1948 by Mervin La Rue, Inc. Procurable on loan from Willis J. Potts, M.D., The Children's Memorial Hospital, 707 Fullerton Avenue, Chicago 14.

This motion picture shows an operation for the tetralogy of Fallot in which the side of the aorta is anastomosed to the side of the left pulmonary artery, thereby increasing the circulation to the lungs. The film shows a child before and after operation and the various steps in the operative procedure. The exposure and isolation of the arteries is performed on the patient, whereas the actual anastomosis is performed on the dog. A strip of animated film is used in demonstrating the steps in the anastomosis, and the animation is excellent. The postoperative picture of the child shows pronounced improvement. This film should be helpful to those who perform cardiovascular surgery. The photography is very good.

Laboratory Diagnosis of Rabies: 16 mm., black and white, sound, showing time 6 minutes. Produced in 1950 by and procurable from United States Public Health Service, Communicable Disease Center, 605 Volunteer Building, Atlanta 3, Ga.

Rabies has become in some communities a major public health problem. It calls for close cooperation of the public health laboratories. Prompt and efficiently conducted laboratory investigation is an essential part in any successful attempt to eliminate or at least reduce this menace. This film gives a complete and detailed description of the steps involved in the laboratory diagnosis of the disease, including gross examination of the brain of the dog, the preparation of histological sections and the microscopic examination. The presentation is accurate, clear, and brief. Everything essential is included. The photography and narration are excellent. It is recommended for veterinarians, medical technologists, pathologists and public health workers.

MEDICAL LITERATURE ABSTRACTS

AMERICAN

A.M.A. Archives of Neurology and Psychiatry, Chicago

64:607-754 (Nov.) 1950

Pain Threshold Studies on Parapiegic Patients. L. A. Hazouri and A. D. Mueller.—p. 607.
Nasal Glioma: Two Cases with Recurrence. B. K. Black and D. E. Smith.—p. 614.
Prevalence and Incidence of Multiple Sclerosis in Boston, 1939-1948: Preliminary Report. J. Ipsen Jr.—p. 631.
Effects of ACTH in Patients with Mental Disease. M. D. Altschule, E. Promisel, B. H. Parkhurst and H. Grunebaum.—p. 641.
*Experimental Study of Case of Insensitivity to Pain. G. A. McMurray.—p. 650.
Colloidal Gold Reaction in Multiple Sclerosis. T. J. C. Von Storch, T. Lawyer Jr. and A. H. Harris.—p. 668.
*Demyelinating Encephalomyelitis Following Use of Antitetanus Serum. H. Csermely.—p. 676.
Production of Convulsions by Administration of Benzedrine® Following Brain Operations in Monkeys. R. A. Blum, J. S. Blum and Kao Liang Chow.—p. 685.
"False" Localizing Signs in Intracranial Tumor: Report of Patient with Left Trigeminal Palsy Due to Right Temporal Meningioma. G. Ehni.—p. 692.
Multiple Choice Type of Visual Retention Test. A. L. Benton.—p. 699.
Lateral Spinothalamic Tractotomy for Relief of Pain in Cauda Equina Injury. R. L. De Saussure Jr.—p. 708.
*Irritating Effect of Iodized Vegetable Oils on Brain and Spinal Cord When Divided into Small Particles. R. Jaeger.—p. 715.
Interruption of Bulbocapnine Catalepsy in Rats by Environmental Stress. H. N. Wagner Jr. and J. W. Woods.—p. 720.

Study of Insensitivity to Pain.—McMurray reports a woman aged 22 who showed from birth a pronounced insensitivity to pain. History revealed a consistent lack of response to pain. Examination showed no evidence of organic neurological disease, such as syringomyelia. Corneal reflexes were absent in both eyes. Psychological tests showed a superior intelligence. There was no pronounced personality disorder. No pathological wave forms were revealed on electroencephalographic examination. The threshold for warmth was moderately elevated. The Hardy-Wolff thermal stimulator disclosed some of the pricking quality of heat without revealing any reaction of pain even at high intensities. Experimental studies showed a complete absence of physiological response to noxious stimuli in all measures used. These measures included recordings of blood pressure, heart rate and respiration taken during experiments using noxious stimuli and using non-noxious stimuli. In the first type, cold water at a temperature of 0 to 2 C., hot water at a temperature of 49 to 51 C. and electric shock from an inductorium were used as pain-producing stimuli. In the second type, a size discrimination test carried out under pressure of time, a mirror-drawing task and exercise with a hand dynamometer were used. Records of physiological response were supplemented by notation of the verbal report of the person and by observation of overt behavior. The same procedures were followed with a group of control persons. At no time during any of the experiments using noxious stimuli did the insensitive person report a sensation or feeling that could be interpreted as a report of pain. The woman exhibited striking behavioral composure and unconcern. The normal control subjects never failed to report pain and showed many of the characteristic, overt behavioral reactions to intense pain. Pronounced physiological changes in blood pressure, heart rate and respiration occurred in the normal, control persons, but not in the insensitive woman. The insensitive woman and the control persons reacted alike to the nonpainful types of stimulating conditions.

Encephalomyelitis and Antitetanus Serum.—Csermely reports a highway worker aged 35, who sustained a small wound on his hand while at work. He received 2,500 international units of tetanus antitoxin by intramuscular route. On the third day thereafter, generalized urticaria developed, followed by symptoms and signs of a cerebrospinal disease process. The patient died on the fourteenth day. Necropsy revealed no pathological changes other than in the nervous system. The microscopic picture resembled that of parainfectious or post-vaccinal leukoencephalitis. The clinical pattern and the miscroscopic changes proved that the process was of allergic nature. Extensive demyelination was observed only where extensive effusion of plasma was present. It seems probable that antibodies in the nervous system are produced exclusively by adventitial histiocytes and mesoglial cells. The circulating antigen comes into contact with the antibodies by transvascular diffusion. Effusion of plasma cannot take place unless the walls of the vessels are damaged. It is probable that antigen-antibody reaction produces a new substance, which destroys the myelin sheaths.

Effect of Iodized Oils on Brain.—Jaeger injected 0.5 cc. of iodized oil emulsion for each 10 pounds (4.5 Kg.) of body weight into the spinal subarachnoid space, cisterna magna or ventricle of dogs. Emulsions of three vegetable oils, iodized oil U. S. P. (lipiodol® iodized poppyseed oil), chloriodized oil (iodochloral,® an iodized peanut oil) and iodized corn oil were used. The dogs became ill immediately after the injection. Most of them survived longer than 24 hours but died within two weeks. When the injection was made into the spinal subarachnoid space, the animal frequently became paraplegic. No part of the subarachnoid space escaped the devastating effect of the emulsion. Necropsy disclosed definite attempts at encapsulation of pockets of the emulsion, and there were extensive adhesions in long-standing preparations at the site of injection. The tissues in the spinal canal and at the base of the brain were matted together with inflammatory granulations and exudate. An emulsion of ethyliodophenyl undecylate was injected into the cisterna magna of five dogs in the same quantities as the other oil emulsions. The animals died within 10 minutes. Apparently emulsion of ethyliodophenyl undecylate is extremely toxic and much more irritating than similar emulsions of the previously used iodized oils. The tiny dispersed particles of the oil probably caused the irritation. Blood serum is an effective emulsifying agent; it is possible, therefore, that a mixture of iodized oil with bloody spinal fluid will result in dispersal of the oil into tiny irritating droplets. Iodized oils should be instilled into the subarachnoid space with due regard to their potential irritating property and should be removed completely either before or immediately after the surgical procedure.

Alabama State Medical Assn. Journal, Montgomery

20:65-104 (Sept.) 1950

Historic Delays in Application of Knowledge About the Heart. P. D. White.—p. 65.
Congenital Malformation of Heart. W. A. Clyde.—p. 75.
Nonsurgical Congenital Heart Disease. J. B. Burrett.—p. 79.
Experiences with Surgery for Relief of Congenital Malformation of Heart and Great Vessels. C. J. Donald Jr.—p. 82.
Anesthesiology in Congenital Heart Disease. E. B. Robinson Jr.—p. 85.
*Obesity with Special Reference to Cardiovascular Disease. D. O. Wright.—p. 86.

Obesity.—Gross obesity increases the incidence of many of the degenerative diseases. Heart disease, hypertension, nephritis, degenerative arthritis, gallbladder disease, arteriosclerosis, diabetes mellitus, varicose veins and venous thrombosis occur

The Association library lends periodicals to members of the Association and to individual subscribers in Continental United States and Canada for a period of five days. Three journals may be borrowed at a time. Periodicals are available from 1940 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted.

with greater frequency in the obese. Diaphragmatic hernia seems to be commoner in persons of excessive weight. Fat patients are a poorer surgical risk. Obesity is due to overeating. Hypothyroidism is frequently accused of being the cause, but Wright knows of no statistical data that prove a higher incidence of obesity in myxedema patients than in other persons. It is difficult to accept the theory that hypofunction of the pituitary is responsible for obesity when atrophy of this gland in Simmond's disease is associated with cachexia. There is a characteristic distribution of fat in Cushing's syndrome, but the accompanying symptoms set it apart from the usual form of obesity. Cases of Cushing's syndrome without obesity have been reported, and weight loss can be induced by a low caloric intake. Strict adherence to a low caloric diet is essential in the treatment of obesity. The patient should be told that reduction will be more rapid during the first few weeks than it will be later as his weight approaches normal. He should be taught to expect periods of several days when he fails to lose weight because of water retention and that it will be followed by a period of more rapid loss of weight when the water is excreted. He must be convinced that his obesity is due to excessive food intake and not to some glandular disturbance. It may be necessary to permit an occasional patient to take a small amount of thyroid extract for a few weeks to keep from offending him. However, he should be informed that this is being permitted to convince him that endocrine therapy is not necessary if the diet is followed. Amphetamine may be of value in reducing appetite, but if it is prescribed the patient should be informed that this drug, as well as all other drugs, is no substitute for determination to adhere strictly to the prescribed diet. There are practically no contraindications to reduction of obesity. Prevention of obesity would mean a decrease in the incidence of the degenerative diseases, and an increase in the longevity of the population.

American J. Digestive Diseases, Fort Wayne, Ind.

17:323-354 (Oct.) 1950

Gastrointestinal Syndrome of Chronic Brucellosis. H. Gauss.—p. 323.
Peptic Ulcer Perforation into Lesser Peritoneal Sac: I. Statistical Study of 57 Collected Cases. M. Feldman.—p. 333.
Successful Management of Infantile Diarrhea in a General Hospital. E. R. Fisher and B. Fisher.—p. 334.
Cholagogic and Choleretic Effect of Sodium Nicotinate. M. Stefanini. —p. 337.
Anti-Anemic Agents and Cholinesterase Activity. J. E. Davis.—p. 339.
Chloromycetin and Aureomycin in Proctology. A. J. Cantor.—p. 340.
Ten Cases of Amoebiasis with Arthritic Complaints. H. H. Zinneman. —p. 342.
Idiopathic Pneumoperitoneum: Review of Literature and Report of One Case. R. W. Ayres, C. R. Beeson and J. B. Scruggs Jr.—p. 345.

American Journal of Medicine, New York

9:425-570 (Oct.) 1950

*Effects of Diet in Essential Hypertension: I. Baseline Study: Effects in 86 Cases of Prolonged Hospitalization on Regular Hospital Diet. D. M. Watkin, H. F. Froeb, F. T. Hatch and A. B. Gutman.—p. 428.
*Id.: II. Results with Unmodified Kempner Rice Diet in 50 Hospitalized Patients. D. M. Watkin, H. F. Froeb, F. T. Hatch and A. B. Gutman. —p. 441.
Effect of Rice Diet on Serum Cholesterol Fractions of 154 Patients with Hypertensive Vascular Disease. H. Starke.—p. 494.
*Bilateral Thoracolumbar Sympathectomy for Hypertension: Study of 500 Cases. J. J. Thorpe, W. J. Welch and C. A. Poindexter.—p. 500.
Causes of Death in Hypertension. D. E. Smith, H. M. Odel and J. W. Kernohan.—p. 516.
Spontaneous Rupture of Papillary Muscle of Heart: Review with Eight Additional Cases. J. M. Askey.—p. 528.

Effects of Diet in Essential Hypertension.—Watkin and his associates record effects of hospitalization on 86 patients with essential hypertension who were given a regular diet for a protracted period. The data obtained from this study afforded a baseline for data on the effects of the unmodified Kempner rice regimen in 50 hospitalized hypertensive patients. The rice diet was prepared in a special kitchen with proper safeguards for low sodium content. The patients were first studied in a preparatory period adequate for stabilization (mean duration 10.1 weeks) and then for a mean period of 10.5 weeks on the unmodified rice regimen. The results obtained with the rice diet corroborated in most essentials the reports by Kempner with respect to symptomatology, hypertension, retinopathy, electrocardiographic changes, cardiac enlargement, electrolyte and nitrogen metabolism and total serum cholesterol. Unfavorable but reversible effects on discrete renal and hepatic function were noted. The effects of systematic addition of sodium chloride to the rice diet, without the patient's knowledge, corroborated the view that the extremely low sodium content of the rice diet is the most significant factor in reduction of the blood pressure. Addition of salt-poor protein and of fat suggests that the rice diet may be unnecessarily restrictive with regard to protein and perhaps in other respects. Rigid restriction of sodium, as advocated by Allen and Kempner, seems to be an important principle in the dietary management of at least those subjects with essential hypertension who require more than reassurance, weight reduction or mild sedation. Effective application of the rice diet for sustained treatment, however, is excedingly difficult, because the critical tolerance level of sodium intake with respect to hypertension appears to be extremely low, at least in many patients with progressive and advanced stages of essential hypertension, and sodium intake above the critical level causes prompt return of hypertensive manifestations. Prolongation of the Kempner regimen in its present form imposes such hardship on the patient and so much difficulty in control as to make it impractical for general use. The effects of less restrictive low-salt diets have not yet been studied on a sufficiently large scale and under sufficiently controlled conditions to determine whether they have more than psychotherapeutic value. The results of sodium restriction in essential hypertension seem to be promising enough to justify further extensive exploration.

Bilateral Thoracolumbar Sympathectomy for Hypertension.—Thorpe and his co-workers report observations on 500 patients with hypertensive disease who were subjected to a bilateral thoracolumbar sympathectomy between January 1942 and July 1948. They state the preoperative condition of the patients with regard to duration of hypertension, symptoms, history of glomerulonephritis, pyelonephritis and toxemia of pregnancy, diastolic readings, organ involvement and laboratory data. While grading hypertensive patients according to the method of Keith, Wagener and Barker, they found frequent disparity between the vascular changes seen in the fundi and those present in other organs. They therefore employed the four group classification of Palmer and associates, which considers damage to other organs as well. The surgical death rate was 8.8 per cent. The mean period of observation was about three years. In the follow-up study, 22 per cent were found to have died. The results of the operation were excellent or good in 27 per cent, fair in 29 per cent, poor in 12 per cent and unknown in 10 per cent. Comparison of the survival curves of this group with a comparable medically treated group at the end of an average period of three years shows no statistically significant difference in groups 1, 2 and 3. In group 4, however, a significantly higher survival rate is apparent in the group operated on. The following conditions should be considered as absolute contraindications to sympathectomy: (1) intractable cardiac failure, (2) renal insufficiency that presents a preoperative blood urea nitrogen level in excess of 20 mg. per cent, (3) mental confusion, (4) cerebral vascular accident or myocardial infarction less than six months before operation and (5) serious psychiatric disturbance at any previous period, e. g., manic-depressive psychosis and severe psychoneurosis. This study verifies the experience of others that a definite decrease in the diastolic blood pressure may be obtained in a significant number of patients over a rather prolonged period, together with a reversal or amelioration in some patients of other manifestations of the hypertensive process, i. e., changes in fundus, electrocardiogram and heart size. The operation of choice is the original Smithwick procedure. The degree of blood pressure reduction and subjective improvement obtained with more extensive procedures do not justify the increased morbidity, postoperative complications and higher mortality rate. If one excludes patients with the aforementioned contraindications, thoracolumbar sympathectomy is indicated as a palliative procedure for hypertensive patients in class 4 and probably in selected cases in class 3.

American J. of Obstetrics and Gynecology, St. Louis

60:711-914 (Oct.) 1950. Partial Index

Cytodynamic Properties of Human Endometrium. I. Cultivation in Fluid Media: Effects of Different Oxygen Tensions Hydrogen Ion Concentrations, and Temperatures. J. H. Randall, R. J. Stein and V. M. Stuermer.—p. 711.
Laurence-Moon-Biedl Syndrome: Confused Symptom-Complex. W. S. Keifer, J. T. Wortham, J. Zanartu and E. C. Hamblen.—p. 721.
Plasma Alkaline Phosphatase. II. Normative Data for Pregnancy. E. Beck and L. C. Clark.—p. 731.
Factors Influencing Urinary Excretion of Calcium. II. Pregnancy and Lactation. E. L. Knapp and G. Stearns.—p. 741.
Evaluation of Rana Pipiens Male Frog Pregnancy Test. R. W. Marsters, M. E. Black and J. D. Randall.—p. 752.
*Chorionepithelioma. Study of 15 Cases. E. E. Dilworth, C. R. Mays and L. A. Hornbuckle.—p. 763.
Time, Site and Treatment of Recurrences of Endometrial Carcinoma. W. F. Finn.—p. 773.
*Anovulatory Menstruation in Women. A. S. H. Wong, E. T. Engle and C. L. Buxton.—p. 790.
Morphologic and Cytochemical Vaginal-Smear Study: Effect of Topical Penicillin in Treatment of Focal Infections of Vaginal Tract. W. B. Ayre, R. Favreau and J. E. Ayre.—p. 798.
*Effect of Penicillin Vaginal Suppositories on Morbidity in Vaginal Hysterectomy and on Vaginal Flora. S. J. Turner.—p. 806.
Results of Treatment with Rh Hapten. E. G. Hamilton and M. E. Brockland.—p. 813.
Conservative Therapy in Lower Nephron Nephrosis. Report of Two Cases with Survival. R. L. Burt, F. L. Lock, J. F. Donnelly and W. A. Wolff.—p. 820.
Comparative Study of Chemical Tests for Early Diagnosis of Pregnancy, Including New Colorimetric Determination. R. L. Merkel.—p. 827.
Extraperitoneal Repair of Vesicovaginal Fistulas. T. C. Bramhall and D. F. Marshall.—p. 834.
Trichomas Vaginalis Vaginitis: Treatment with New Surface-Active Trichomonacide. J. M. Hundley, W. K. Diehl, H. A. Shelanski and R. L. Stone.—p. 843.
Extraperitoneal Cesarean Section: Review of 71 Consecutive Operations. G. A. Bourgeois and L. E. Phaneuf.—p. 866.
Mumps In Pregnancy. H. A. Schwartz.—p. 875.
Effects of Dexedrine Sulfate on Nausea and Vomiting of Pregnancy. R. D. Anspaugh.—p. 888.
Granuloma Inguinale of Cervix Uteri and Vulva Treated with Streptomycin. R. H. Hoge and A. M. Salzberg.—p. 911.

Chorioepithelioma.—Dilworth and associates reviewed 15 cases of chorioepithelioma. They emphasize that the mortality in these patients depends more on the proper classification of the tumors than on the treatment. According to their classifications, there was one case of syncytioma, three of chorioadenoma and 11 of chorionic carcinoma. The authors found that chorionic carcinoma was fatal in all cases, whereas there was no mortality in the chorioadenoma and syncytioma group. The authors concluded that roentgen therapy is of little or no value in treatment of chorioadenoma or its metastatic lesions and that total hysterectomy is curative in the chorioadenoma and syncytioma group. The chief value of hysterectomy in the chorionic carcinoma group is that of prevention of early death from uterine hemorrhage or from intercurrent infection following secondary anemia. Metastasis was found to be no contraindication to surgery.

Anovulatory Menstruation.—Wong and associates obtained from 36 sterility patients of childbearing age 47 endometrial biopsy specimens that proved to be anovulatory. Twenty-eight of the patients were nulliparous. The duration of sterility ranged from one to nine years. Thirteen of these patients had a normal menstrual history, while the rest had a history of oligomenorrhea or secondary amenorrhea. Only one patient had menorrhagia. The number of anovulatory cycles in these 36 patients varied from one to five. Nineteen patients were anovulatory continuously while under observation for several months to a year, whereas the remainder were periodically so. Four patients in the latter group became pregnant. The overall clinical picture of these 36 patients showed a fairly constant correlation between obesity, mild hirsutism and anovulation.

Penicillin Vaginal Suppositories.—Turner reports on the effect of penicillin vaginal suppositories on morbidity in vaginal hysterectomy and on vaginal flora. A theobroma oil (cocoa butter) suppository containing 100,000 units of crystalline potassium penicillin G was inserted vaginally from 12 to 14 hours prior to operation in 100 consecutive, nonselected vaginal hysterectomies. Only seven patients experienced postoperative, febrile morbidity. With use of the same preoperative preparation, but excluding the use of the penicillin suppository, the morbidity was 37.5 per cent in 56 vaginal hysterectomies and 34.8 per cent in a similar group of 210 cases. Bacteriologic and clinical studies supported the author's belief that penicillin vaginal suppositories are of value in reducing morbidity when employed as an adjunct in preoperative preparation for vaginal hysterectomy.

American Journal of Ophthalmology, Chicago

33:1497-1664 (Oct.) 1950

Relationship of Heterophoria to Depth Perception in Aviation, with Particular Reference to Work of Royal Canadian Air Force: Part I. J. V. V. Nicholls.—p. 1497.
Use of Intravenous Novocain in Ophthalmology. E. E. Grossmann, J. B. Hitz and G. J. Roncke.—p. 1515.
Some Problems in Diagnosis and Treatment of Glaucoma: The Third Mark J. Schoenberg Lecture. J. S. Friedenwald.—p. 1523.
Changes in Vision During Adolescence. A. E. Sloane and J. R. Gallagher.—p. 1538.
Effects of Procaine and Cocaine When Applied Locally to Iris. H. G. Scheie and G. W. Ojers.—p. 1543.
Effect of Certain Hydrogenated Alkaloids of Ergot on Glaucoma. A. Posner.—p. 1551.
Alloxan Diabetes and Lens. J. G. Bellows and D. E. Shoch.—p. 1555.
Ocular Manifestations of Intravenous Tetraethyl Ammonium Chloride in Man. A. P. Drucker, M. S. Sadove and K. R. Unna.—p. 1564.
Temporal Arteritis as Cause of Blindness: Review of Literature and Report of Case. G. M. Bruce.—p. 1568.
Management of Chronic Inflammation of Orbital Socket. J. Macivor.—p. 1573.
Ocular Conditions Associated with Idiopathic Hyperlipemia. E. B. Dunphy.—p. 1579.
Crisp-Stine Test for Astigmatism and Lebensohn Astigmometer. G. H. Stine.—p. 1587.
Massive Intraocular Hemorrhage Following Severe Cerebral Vascular Accident. S. A. Goodman.—p. 1591.

American Journal of Psychiatry, New York

107:241-320 (Oct.) 1950

Nonconvulsive Electric Stimulation Therapy: Its Place in Treatment of Affective Disorders, with Notes on Reciprocal Relationship of Anxiety and Depression. L. Alexander.—p. 241.
Controlled Study of Personality Relationships in Mothers of Schizophrenic Male Patients. C. T. Prout and M. A. White.—p. 251.
Social and Work Adjustment in Patients with Epilepsy. M. A. Lennox and J. Mohr.—p. 257.
Emotional Problems of High Blood Pressure. E. Weiss, B. Jaffe and H. K. Fischer.—p. 264.
Student Council Study: Preliminary Report. E. D. Bond.—p. 271.
Graduate Teaching of Psychiatry Through Individual Supervision. F. G. Ebaugh.—p. 274.
Intensive Electric Shock Therapy of Chronic Disturbed Psychotic Patients. M. Shoor and F. H. Adams.—p. 279.

Annals of Internal Medicine, Lancaster

33:787-1012 (Oct.) 1950

Cortisone. E. C. Kendall.—p. 787.
*Clinical Recognition and Treatment of Acute Potassium Intoxication. J. P. Merrill, H. D. Levine, W. Somerville and S. Smith.—p. 797.
Biochemical Studies in Multiple Sclerosis. H. H. Jones, H. H. Jones Jr. and L. D. Bunch.—p. 831.
Effects of Nitrogen Mustard on Bone Marrow in Polycythemia Vera. C. C. Shullenberger and C. H. Watkins.—p. 841.
Adrenal Cortex in Liver Disease. J. J. Webster.—p. 854.
Question of Traumatic Heart Disease. I. Gore.—p. 865.
*Streptococcic Viridans Meningitis: Review of Literature and Report of Nine Recoveries. A. L. Hoyne and H. Herzon.—p. 879.
Apical Diastolic Murmurs in Patent Ductus Arteriosus. A. Ravin and W. Darley.—p. 903.
Use of BAL in Treatment of Skin Reactions Due to Gold Therapy. M. M. Montgomery.—p. 915.
Statistical Study of 6,000 Cases of Diabetes. H. J. John.—p. 925.
Tuberculosis in Student Nurses and Medical Students at University of Wisconsin. H. A. Dickie.—p. 941.
*Outbreak of Primary Pulmonary Coccidioidomycosis in Los Angeles County, California. M. D. Kritzer, M. Biddle and J. F. Kessel.—p. 960.
Errors in Diagnosis and Management of Cancer. Part II. D. Laszlo, M. L. Colmer, G. B. Silver and S. Standard.—p. 991.
*Congenital Absence of Gall Bladder—A Possible Hereditary Defect. J. L. Kobacker.—p. 1008.

Recognition and Treatment of Potassium Intoxication.—Merrill and co-workers determined that hyperkalemia may be a fatal accompaniment of oliguria or anuria associated with renal insufficiency. Pronounced and characteristic electrocardiographic changes preceded the clinical syndrome of acute potassium intoxication in nine reported cases. The authors emphasize the fact that clinical and electrocardiographic evidence of potassium intoxication cannot be correlated with the absolute concentration of potassium in the blood. However, an abnormal electrocardiogram reflects the composite effect of several chemical changes and, therefore, is a more reliable

clinical index than the determination of any one chemical change in the blood. This emphasizes the importance of frequent electrocardiographic examination for early detection of evidence of potassium intoxication in anuria. Dextrose and insulin administration is the most effective immediate chemotherapeutic treatment of potassium intoxication. Its effect is more pronounced and lasting than that obtained by the administration of either sodium or calcium salts. Of the methods available, dialysis, which permits artificial removal of potassium and simultaneous correction of acidosis, is most effective and lasting. Its effect is complete and measured in terms of days, as opposed to the effects from the infusion of dextrose and insulin, which are partial and measured in terms of hours. Dialysis was also shown to effect definite changes following maximum benefit from the other forms of therapy.

Streptococcus Viridans Meningitis.—Hoyne and Herzon review the literature on Streptococcus viridans meningitis. To date, 34 recoveries, including the authors' nine cases, and 29 deaths following the disease have been reported. The incidence of Streptococcus viridans meningitis was found to be 0.3 per cent to 2.4 per cent of all cases of purulent meningitis. Analysis of the probable sources of infection in this disease disclosed that it followed subacute bacterial endocarditis in only 13 per cent of the cases and ear, nose and throat infections in 31 per cent. No source was found in 35 per cent. Streptococcus viridans organisms were found to vary in their sensitivity to different sulfonamides and to penicillin. In addition, there are strains that are resistant either to various sulfonamides or to penicillin. Therapy in Streptococcus viridans meningitis should be adjusted after determination of the sensitivity of the organism to all the sulfonamides and to the antibiotics. When sensitivity tests are not available, the use of a combination of penicillin and a sulfonamoide is the treatment of choice. At least 50,000 units of penicillin should be given every three hours intramuscularly (intrathecal medication is contraindicated), and 2 to 3 grains (120 to 240 mg.) per pound (0.5 Kg.) of body weight per day of a sulfonamide. Sulfadiazine, sulfathiazole or sulfapyridine is prescribed.

Outbreak of Primary Pulmonary Coccidioidomycosis.—Kritzler and associates review the literature and report on an outbreak of primary pulmonary coccidioidomycosis in Los Angeles County. Seven hospitalized patients were studied. These patients were part of a group of 61 boys from a forestry camp in which others had been ill with similar symptoms at the time. These cases constituted the first endemic focus of this disease in Los Angeles County. Clinical epidemiological histories were obtained at the camp, and skin precipitin and complement fixation tests of this group were made. A group of 45 boys who were transferred to this camp during the course of this study served as controls. Both study and control groups were given histoplasmin and coccidioidin antigens. Approximately the same percentage of histoplasmin reactors was observed in both groups, regardless of the number of positive coccidioidin responses. The value of repeated skin tests and serial complement fixation tests was established by this study. The authors concluded that a positive complement fixation test is evidence of either past or current active infection. The importance of repeated complement fixation tests was established by the initial equivocal reactions, which subsequently changed to either positive or negative. Frequently, the change from an equivocal to a positive reaction was accompanied by clinical signs of active infection. The value of repeated skin tests with different dilutions was also established in these studies. Two dilutions of the coccioidin antigen were used, 1: 100 and 1: 10. The histoplasmin was used in a dilution of 1: 1,000. Since the symptomatology of the disease is nonspecific, reliance was placed on serial roentgenograms, serial complement fixation tests and repeated skin tests. Concomitant with these procedures, blood cell counts and sedimentation rates should be completed. The time for ambulation of the convalescent patient with this disease is still unsettled. Patients in this study were hospitalized because they could not be cared for at the camp. The authors believe that, with intelligent cooperation, bed rest at home can be attended with successful results.

Congenital Absence of Gallbladder.—Kobacker reports the case of two sisters in whom agenesis of the gallbladder was revealed by surgical exploration. The gallbladders of three of five sisters of the reported patients could not be visualized with cholecystography. Gallbladders in two second generation girls were also not visible. The histories of the proved cases supported the experience of other authors that gallbladder absence is accompanied by dyspepsia and symptoms of biliary disturbance. The observations suggested that inflammatory and structural changes underlie these manifestations. No previous intrafamilial occurrence of this anomaly has been reported. The incidence inferred in the reported family supports the possibility that absence of the gallbladder is an hereditary anomaly. Nonvisualization of the gallbladder merits special notice in any family in which one case of congenital absence has already been established.

Blood, New York

5:887-982 (Oct.) 1950

Occurrence in Family of Sicilian Ancestry of Traits for Both Sickling and Thalassemia. W. N. Powell, J. G. Rodarte and J. V. Neel.—p. 887.
*Folic Acid Antagonists in Treatment of Acute and Subacute Leukemia. W. Dameshek, M. H. Freedman and L. Steinberg.—p. 898.
Benign Pericardial Effusion in Course of Chronic Myelogenous Leukemia: Case Report. N. H. Friedman and J. J. Silverman.—p. 916.
Hemolytic Anemia in Myelogenous Leukemia with Splenectomy. U. Jonsson, O. C. Hansen-Pruss and R. W. Rundles.—p. 920.
Blood Exchange in Replacement Transfusions: I. Theoretic Considerations. L. R. Wasserman and L. Sharney.—p. 925.
Id.: II. Studies with Erythrocytes Tagged with Radioactive Phosphorus. L. R. Wasserman, I. A. Rashkoff, L. Sharney and others.—p. 938.
Sedimentation Differential Agglutination Test: I. Method of Test. II. Observations on Destruction and Production of Red Blood Cells, with Special Reference to Myeloblastic Leukemia and Comparison with Results of Radioactive Phosphorus Method. D. Stats.—p. 950.
One-Stage Prothrombin Consumption Test: Clinical Value in Identification of Thromboplastin-Deficiency Diseases. M. Stefanini and W. H. Crosby.—p. 964.

Folic Acid Antagonists in Acute Leukemia.—Dameshek and his co-workers treated 40 patients with acute and subacute leukemia with one or more of various folic acid antagonists, usually 4-aminopteroylglutamic acid (aminopterin). Of 32 patients treated for at least one week, 10 experienced remissions. The remissions were temporary and variable in duration. On June 1, 1949, two patients were still alive and in good health, seven and one-half and 13 months, respectively, after the start of therapy. Clinical, hematological and, to a lesser extent, marrow remissions were obtained most commonly in the lymphocytic type, and there were none in the four monocytic cases. There was far more success in the subacute cases than in those of the acute, fulminating variety. Therapy consisted in administration of the drug, usually by parenteral injection, until a toxic or a pronounced hematological reaction occurred. With subsidence of the toxic reaction, a maintenance dosage was then given, usually in the form of oral medication, 0.5 mg. daily for adults and 0.25 mg. for children. Transfusions were usually helpful at the time of the initial reaction, when anemia was severe. Penicillin and other antibiotics were used for supportive therapy. Thrombocytopenia and hemorrhage were difficult to control. The remissions appeared to be attributable to the action of the drug. Although temporary, they indicate that acute leukemia is not necessarily completely irreversible.

Cancer Research, Chicago

10:523-586 (Sept.) 1950. **Partial Index**

Chemical and Physical Characteristics of Preparations Containing Milk Agent Virus: Review. C. P. Barnum and R. A. Huseby.—p. 523.
Macromolecular Particles Obtained from Human Neoplastic and Non-Neoplastic Lymph Nodes: I. Procedure and Preliminary Results. M. S. Hoster, B. J. McBee, H. A. Rolnick and others.—p. 530.
Tobacco Smoking Habits and Cancer of Mouth and Respiratory System. C. A. Mills and M. M. Porter.—p. 539.
Neoplasms in Rats Treated with Pituitary Growth Hormone: III. Reproductive Organs. H. D. Moon, M. E. Simpson, Choh Hao Li and H. M. Evans.—p. 549.
Histochemical Localization of Alkaline Phosphatase During Carcinogenesis in Rats Fed *p*-Dimethylaminoazobenzene. B. Pearson, A. B. Novikoff and T. G. Morrione.—p. 557.
Effect of Sulfonated Azo Dyes on Mouse Tumors. K. Stern.—p. 565.
Failure to Inhibit Formation of Mammary Carcinoma in Mice by Intermittent Fasting. A. Tannenbaum and H. Silverstone.—p. 577.

Diseases of Chest, Chicago

18:277-400 (Oct.) 1950

*Extrapleural Pneumonolysis with Lucite Ball Plombage. O. C. Brantigan and H. L. Rigdon.—p. 277.
Effect of Streptomycin on Lesions of Tuberculous Meningitis. G. I. Ogura and J. Denst.—p. 291.
Streptomycin and the Thoracoplasty Patient. E. Michelson.—p. 303.
Pneumonectomy in Case of Loeffler's Syndrome. M. G. Buckles and E. C. Lawless.—p. 312.
Pleural Effusions and Intrapleural Pressures of Re-expansion Period in Pneumothorax. T. G. Heaton.—p. 324.
Idiopathic Pulmonary Fibrosis: Its Occurrence in Identical Twin Sisters. J. W. Peabody, J. W. Peabody Jr., E. W. Hayes and E. W. Hayes Jr. —p. 330.
*Pulmonary Hemorrhage: Its Control by Use of Intravenous Pituitrin. H. G. Trimble and J. R. Wood.—p. 345.
Efficiency of Different Laboratory Examinations in Diagnosis of Pulmonary Tuberculosis. D. Hata Jr., H. D. Venters Jr. and M. M. Cummings.—p. 352.
Chest Injuries in Civilian Practice. E. F. Skinner, D. Carr, C. R. Kessler and W. E. Denman.—p. 363.
Procedures Which Make Possible Adjustment to Cure of Patient with Pulmonary Tuberculosis and Technique for Carrying out These Procedures. E. W. Hayes.—p. 376.
Control of Vestibular Toxic Effects of Streptomycin by Dramamine. L. L. Titche and A. Nady.—p. 386.

Extrapleural Pneumolysis.—Brantigan and Rigdon performed 72 lucite ball plombage operations on 62 patients with pulmonary tuberculosis. Eight of these patients had a bilateral plombage operation. In 13, the contralateral lung had undergone collapse therapy at the time of the plombage operation. All the operations except two were done with paravertebral block with 1 per cent solution of procaine hydrochloride and local infiltration of 0.5 per cent solution of procaine hydrochloride. The patients were followed up for six months to two years. Two patients died, one on the third postoperative day from extensive flare-up of the disease and the other from recurrent tuberculous meningitis several months after the pulmonary plombage. No other complications developed. Thirty-five patients had negative sputum, and none had been made worse. Results are better if patients with bilateral disease are considered separately from those with unilateral disease. Of 36 patients, 31 with unilateral disease had negative sputum, three had positive sputum and two died. Lucite® (a polymerized methyl methacrylate) has the advantage of being nonirritating to tissue, noncarcinogenic and nonantigenic, insoluble, only slightly resistant to roentgen rays, round and easily fitted into any space, and not heavy enough to cause erosion or migration. Extrapleural lucite® ball plombage is indicated only in apical disease. Plombage is a single stage operation. Thoracoplasty, which can be done in multiple stages, should be used if more extensive collapse is needed. Giant cavities, large tension cavities, tuberculomas, spreading acute disease and extensive disease from apex to base are contraindications to plombage operation. Extrapleural lucite® ball plombage has a definite place in the treatment of pulmonary tuberculosis.

Control of Pulmonary Hemorrhage by Pituitrin.®—Trimble and Wood treated 32 patients with pulmonary hemorrhage by intravenous administration of 10 international units of posterior pituitary injection (pituitrin®) with 10 cc. of isotonic solution of sodium chloride. The injection was made slowly over a 10 minute period. The pulmonary hemorrhages were due to various diseases, such as tuberculosis, bronchiectasis, tumors, coccidioides, heart disease or a large number of other diseases, which less frequently produce this symptom. Hemorrhages were severe, were not immediately fatal, but if allowed to continue, might have produced other complications, such as atelectasis and other interference with the bronchial drainage or eventually exsanguination. Dizziness, slight abdominal cramping pains, an urge to empty the bowels and bladder and nausea were transitory effects and disappeared rapidly. Prompt control of the bleeding was obtained in all patients except one. It is felt that the fact that only 5 international units were used in this case, instead of the 10 international units recommended, may have been a contributory factor to the patient's continued bleeding and death. In general, one intravenous injection will control the severest pulmonary hemorrhage from whatever cause.

Endocrinology, Springfield, Ill.

47:219-310 (Oct.) 1950

Excretion of Administered Radiocalcium Following Thyroparathyroidectomy, or Bilateral Nephrectomy, and Injection of Parathyroid Extract. W. R. Tweedy, M. V. L'Heureux and B. M. Zorn.—p. 219.
Biochemical Effects of Sex Hormones in Adrenalectomized Rats. K. W. Buchwald, L. Hudson and J. Bellanca.—p. 228.
Local Action of Adrenocortical Steroids on Epidermis and Connective Tissue of Skin. C. W. Castor and B. L. Baker.—p. 234.
Study of Absorption Characteristics of Iodine-131 Labeled Iodinated Casein in Some Mammals. D. J. Campbell, F. N. Andrews and J. E. Christian.—p. 242.
Influence of Thiocarbonamides and Certain Other Sulfur Compounds on Alloxan Diabetes in Rats. I. N. Rosenberg and M. S. Raben.—p. 251.
Succinic Dehydrogenase Levels in Striated Muscle in Relation to Male Hormone. S. L. Leonard.—p. 260.
Inactivation of Estrone by Rats in Relation to Dietary Effects on Liver. R. E. Vanderlinde and W. W. Westerfeld.—p. 265.
Nucleic Acid Content and Succinic Dehydrogenase Activity of Stimulated Pigeon Crop Gland Tissue. W. H. McShan, J. S. Davis, S. W. Soukup and R. K. Meyer.—p. 274.
Mechanisms of Desoxycorticosterone Action: Renal Effects of Water-Soluble Glycoside. D. M. Green, A. Farah and W. W. Klemperer. —p. 281.
Two Types of Basophils in Anterior Pituitary of Rat and Their Respective Cytophysiological Significance. N. S. Halmi.—p. 289.

Florida Medical Association Journal, Jacksonville

37:185-264 (Oct.) 1950

Medical Planning for Atomic Disaster. W. L. Wilson.—p. 203.
Nummular Eczema, Its Differential Diagnosis and Treatment. B. F. Barney.—p. 212.
Problems Met in Use of Dicumarol in Acute Myocardial Infarction. S. Davidson.—p. 215.
Clinical Use of Terramycin in Infections of Urinary Tract. J. A. McKensie and J. J. Nugent.—p. 218.

37:265-328 (Nov.) 1950

Diagnosis in Heart Disease. E. Evans.—p. 283.
Roentgen Examination in Acute Surgical Conditions Within the Abdomen. F. K. Hurt and B. H. Malone.—p. 287.
Differential Diagnosis of Low Back Pain Based on Study of 281 Cases. R. Herz.—p. 289.
Parathion Poisoning. J. W. Williams.—p. 293.

Journal of Clin. Endocrinology, Springfield, Ill.

10:1177-1362 (Oct.) 1950

Functional and Structural Changes Consequent to High Dosage of Radioactive Iodine. A. Gorbman.—p. 1177.
Response of Thyroid Gland to Thyrotropic Hormone as Aid in Differential Diagnosis of Primary and Secondary Hypothyroidism. A. Querido and J. B. Stanbury.—p. 1192.
Present Concepts of Pathologic Physiology of Exophthalmos. B. M. Dobyns.—p. 1202.
Surgical Treatment of Progressive Exophthalmos. J. L. Poppen. —p. 1231.
Clinical Experience with Blood Protein-Bound Iodine Determination as Routine Procedure. P. Starr, D. W. Petit, A. L. Chaney and others. —p. 1237.
Analysis of Medical Treatment of Hyperthyroidism with Thiourea and Iodine: With Special Reference to Behavior of Serum Precipitable Iodine During Therapy. W. W. Enstrom, D. M. Kydd, E. B. Man and J. P. Peters.—p. 1251.
Treatment of Euthyroid Cardiac Patients with Intractable Angina Pectoris and Congestive Failure with Radioactive Iodine. A. S. Freedberg, H. L. Blumgart, G. S. Kurland and D. L. Chamovitz.—p. 1270.
Effects of Adrenal and Gonadal Products on Weight and Radioiodine Uptake of Thyroid Gland in Rat. W. L. Money, L. Kirschner, L. Kraintz and others.—p. 1282.
*Cancer of Thyroid in Children: Report of 28 Cases. B. J. Duffy Jr. and P. J. Fitzgerald.—p. 1296.
Simple Goiter in Colombia. I. Greenwald.—p. 1309.

Thyroid Cancer in Children.—Duffy and Fitzgerald analyze 28 cancers of the thyroid in children between the ages of 4 and 18 years. They constituted 6.5 per cent of the 430 cancers of the thyroid seen at Memorial Hospital during the 16 year period 1932-1948. Histological studies revealed papillary carcinoma in 15 cases, alveolar and follicular carcinoma in eight cases, solid carcinoma in four cases and one case of unclassified carcinoma. All but two of the patients had metastases in the cervical lymph nodes. In 10 patients the only evidence of disease was one or more enlarged cervical lymph nodes. Thirteen patients had pulmonary metastases on admission or subsequently. In 25 cases the onset was correlated with puberty. Only one patient came from an endemic goiter area; only two gave a familial history of thyroid disease. Nine of the patients had been subjected to low voltage

roentgen therapy for "enlarged thymus" between the fourth and eighteenth months of life. Thyroid cancer should be seriously considered in the diagnosis of lumps in the necks of children.

Journal of Experimental Medicine, New York

92:299-382 (Oct.) 1950

Effect of Alloxan Diabetes on Experimental Cholesterol Atherosclerosis in Rabbit: III. Mechanism of Inhibition of Experimental Cholesterol Atherosclerosis in Alloxan-Diabetic Rabbits. G. L. Duff and T. P. B. Payne.—p. 299.
Effect of Organic Acids on Mammalian Tubercle Bacilli. R. J. Dubos. —p. 319.
Effect of Deficiency of B Vitamin Complex (Except Thiamine) on Blood Pressure of Rat. P. Merritt.—p. 333.
Studies of Peroxidative Detoxification of Purified Diphtheria Toxin. K. Agner.—p. 337.
Studies on Extracellular Cultivation of Intracellular Parasite (Avian Malaria): I. Development of Organisms in Erythrocyte Extracts, and Favoring Effect of Adenosinetriphosphate. W. Trager.—p. 349.
Plasma Iron and Saturation of Plasma Iron-Binding Protein in Dogs as Related to Gastrointestinal Absorption of Radioiron. C. L. Yuile, J. W. Hayden, J. A. Bush and others.—p. 367.
Radioiron Absorption in Anemic Dogs: Fluctuations in Mucosal Block and Evidence for Gradient of Absorption in Gastrointestinal Tract. W. B. Stewart, C. L. Yuile, H. A. Claiborne and others.—p. 375.

Journal of Immunology, Baltimore

65:297-354 (Sept.) 1950

Comparative Immunizing Capacity of BCG and Proteins and Polysaccharides in Tubercle Bacillus Culture Filtrates. F. B. Seibert. —p. 297.
Immunological Studies of Three Antitoxin Containing Globulin Fractions of the Horse. B. V. Jager, E. L. Smith, H. Bernhisel and L. A. Jager. —p. 311.
Studies on Haemagglutination with GDVII Strain of Murine Encephalomyelitis. L. B. Fastier.—p. 323.
Agglutinin Response to Intradermal Tests for Sensitivity to Brucella. C. M. Carpenter, C. J. Deboer, S. J. Klein and C. E. Tempereau. —p. 331.
Etiology of Epidemic Pleurodynia: Study of Two Viruses Isolated from Typical Outbreak. T. H. Weller, J. F. Enders, M. Buckingham and J. J. Finn Jr.—p. 337.
Agglutination-Inhibition Test Proposed as Standard of Reference in Influenza: Diagnostic Studies. Committee on Standard Serological Procedures in Influenza Studies.—p. 347.

Journal of International College of Surgeons, Chicago

14:367-490 (Oct.) 1950

Lumbar Hernia. M. Thorek.—p. 367.
Principles and Application of Stereoencephalotomy. E. A. Spiegel and H. T. Wycis.—p. 394.
New Approach to Treatment of Subcapital and Transcervical Fractures of Hip: Preliminary Report. E. L. Jewett.—p. 403.
Anomalous Opening of Common Bile Duct into Stomach: Report of Case. E. C. Sites and J. Lauridsen.—p. 420.
Internal Hernia as Cause of Intestinal Obstruction: Report of Three Cases. J. A. Gubler and P. R. Yedinak.—p. 425.
Observations on Total Gastrectomy. J. H. Smith.—p. 435.
Nonrigid Method of Treatment for Early Clubfoot. H. Lusskin.—p. 444.
Gallstone Ileus. H. Greenfield.—p. 448.
Pentothal Sodium in Ophthalmic Surgery: Ten-Year Review of Its Use at Pittsburgh Eye and Ear Hospital. J. G. Linn.—p. 453.

J. Venereal Disease Information, Washington, D. C.

31:251-280 (Oct.) 1950

Value of Divided Cerebrospinal Fluid Specimens. R. A. Koch.—p. 251.
Treatment of Syphilis of the Masses. R. R. Willcox.—p. 254.
*Treatment of Gonorrhea with Chloramphenicol (Chloromycetin). A. B. Greaves, G. R. MacDonald, M. J. Romansky and S. R. Taggart. —p. 261.
Gonococci and Menstrual Cycle. T. Putkonen and K. Ebeling.—p. 263.

Chloramphenicol in Treatment of Gonorrhea.—Greaves and his associates state that relatively large single or multiple doses of chloramphenicol were demonstrated to be effective in the treatment of gonorrhea. They decided to try small single doses. Males with acute gonorrhea urethritis in whom the Gonococcus could be demonstrated by spread and culture were selected for study. Fifty patients were treated with a single oral dose of 750 mg., 16 with 500 mg. and five with 250 mg. All but two, or 96 per cent, of the 50 patients were cured, but in the other two groups the cure rates were 75 and 25 per cent. The authors deduce that chloramphenicol is effective in treatment of gonorrhea if given in adequate dosage. It produced no toxic reactions in the doses used in this study. The authors believe that gonorrheal patients treated with chloramphenicol should have the same three to six months' post-treatment observation as has been advised for penicillin treatment. The same potential danger of masking syphilis exists as in the penicillin treatment.

Maine Medical Association Journal, Portland

41:377-412 (Oct.) 1950

Progress in American Medicine. R. A. Goodwin.—p. 378.
Roentgenological Examination of Colon (with Special Reference to Use of Tannic Acid and of Routine Lateral Views). C. F. Miller.—p. 382.
*Misuse of Penicillin and Other Antibiotics in Treatment of Acute Otitis Media. M. N. Flanders.—p. 385.
Shoulder Pain. C. H. Rand and P. L. Archambault.—p. 386.
Oil Emboli Following Attempted Criminal Abortion: Case Report. G. E. Eddins, R. Frost, C. W. Steele and I. Goodof.—p. 388.
Cancer Serum Flocculation Test Employing the Penn Antigen. J. Gottlieb and V. L. Kangas.—p. 391.

Misuse of Antibiotics in Otitis Media.—Flanders asserts that the disappearance of pain, fever and discharge from the ears in response to penicillin therapy during an attack of otitis media does not constitute a cure. The sterilization of exudate in the middle ear by antibiotic therapy may prevent the complication of mastoiditis, but complete resolution of the inflammatory changes that have taken place in the middle ear can be effected only by the escape of the fluid from the middle ear. A properly performed myringotomy done in the early stages of the acute otitis media accomplishes this. When myringotomy is not done, the continued presence of an exudate in the middle ear, even though it might be sterile, causes thickening of the membrane of the middle ear. The mobility of the ossicles and even of the ear drum are lessened. Ultimately, some fibrosis develops beneath the membranes and the hearing acuity suffers a permanent reduction. The histological changes that take place are irreversible.

Medical Annals of District of Columbia, Washington

19:543-600 (Oct.) 1950

Use of Endocrines in Gynecology. R. A. Kimbrough Jr. and S. L. Israel. —p. 543.
Behavior Problems of Normal Children. M. Ross.—p. 552.
Intraepithelial Carcinoma of Cervix Uteri. T. Winship, D. F. Bell and C. T. Klopp.—p. 557.
Management of Acute Myocardial Infarction. W. L. Howell.—p. 564.

Michigan State Medical Society Journal, Lansing

49:1169-1216 (Oct.) 1950

A Doctor Makes Critical Survey of Medical Profession. P. R. Hawley. —p. 1169.
Obesity. A Complication in Carcinoma Cervix Uteri. R. C. Hildreth. —p. 1175.
Role of Anoxia and Dietary Deficiency in Various Clinical States Including Malignancy. Preliminary Report. E. A. Bicknell.—p. 1179.
*Can Cancer Be Inherited Family Disease? H. J. VandenBerg.—p. 1185.
Rationale of Therapy of Blood Diseases. W. Appel.—p. 1188.
Experiences with Cervical Arteriovenous Fistulas in Attempts to Increase Blood Supply to Brain. J. M. Hammer, H. S. Heersma, W. P. Marshall, and others.—p. 1191.
Fresh Fractures of Shaft of Femur. Current Methods of Treatment. J. E. Summers.—p. 1198.
Congenital Malformations of Heart. C. R. Leininger.—p. 1202.
Report on New Deodorant for Hospital Use. P. N. Brown.—p. 1205.
Why Nursing Education? G. E. Nathe.—p. 1206.
Abruptio Placentae Occurring in Three Successive Pregnancies. Case Report. W. Byrne and C. N. Swanson.—p. 1207.

Heredity of Cancer.—VandenBerg observed breast cancer in a mother, her two daughters and a granddaughter. In the first three the cancer was bilateral and the sequence was identical, the left breast being first involved, then the right breast. In the daughters the sites of the lesions also were identical (2 o'clock-3 o'clock). The sequence might have been the same in the mother. The granddaughter, aged 36, had a tumor, again in the left breast, at the same site. This occurrence of primary tumors not only in the same tissue or organs but in the same sequence and exact sites coincides with the behavior of tumors in identical twins. Tumors in identical twins offer the most convincing evidence of the causative role of heredity in cancer.

If tumors are of genetic origin in twins, the origin may be the same in others. The mother, the two daughters and the granddaughter had a fibroid uterus. The author cites retinoblastoma and neurofibroma as other examples of hereditary neoplasms. There is much evidence that carcinoma of the breast, cervix and rectum carry inheritance factors. Polyposis of the large intestine is known to be often hereditary and to tend to become malignant.

Minnesota Medicine, St. Paul

33:961-1064 (Oct.) 1950

Milk-Borne Brucellosis in Minnesota. C. B. Nelson and M. Giblin. —p. 981.
Management of Status Asthmaticus. W. S. Eisenstadt.—p. 983.
Roentgen Diagnosis of Silicosis. E. P. Pendergrass.—p. 988.
Prediction and Prevention of Coronary Thrombosis in Younger Age Groups: Suggestion for Further Study. R. L. Parsons and J. J. Heimark.—p. 999.
The Heart in Friedreich's Ataxia. M. E. Flipse, T. J. Dry and H. W. Woltman.—p. 1000.
*Chronic Leukemic Infiltration of Gastric Wall Simulating Peptic Ulcer. R. H. Conley and J. A. Wilson.—p. 1004.
Ciliary Action and Atelectasis. A. C. Hilding.—p. 1009.
Transfusion Problems. R. W. Koucky.—p. 1015.

Leukemic Infiltration of Gastric Wall Simulating Peptic Ulcer.—Conley and Wilson give the history of a patient in whom a diagnosis of duodenal ulcer was made in 1931 and confirmed in 1940. He was hospitalized in 1945 with symptoms indicative of acute coronary occlusion, but electrocardiograms failed to reveal infarction or evidence of coronary insufficiency. Numerous electrocardiographic studies done since continued to show normal tracings. Precordial pain, partially relieved by sublingually administered glyceryl trinitrate (nitroglycerin), was the cause of his readmission in June 1947. Laboratory studies at this time revealed a persistently elevated white blood cell count. Biopsy of a small node in the right axilla revealed chronic lymphatic leukemia. This was confirmed by bone marrow biopsy. Roentgenograms revealed a filling defect in the midportion of the stomach. From June 1947 until January 1949 follow-up studies were carried out at three-month intervals. At each examination, precordial pain and epigastric distress continued to be the main complaint. During this interval, the spleen and liver became palpable and the lymph nodes became more prominent. In January 1949 emergency hospitalization became necessary because of nausea, vomiting, 10 pound (4.5 Kg.) weight loss, epigastric distress and precordial pain. A gastric ulcer was observed on the lesser curvature and posterior wall. A crater in the duodenal bulb was also noted. Gastroscopy revealed a large, penetrating gastric ulcer on the lesser curvature. The ulcer healed, but recurrences necessitated readmission in August and October. Subtotal gastrectomy was performed. The resected specimen revealed typical chronic lymphatic leukemia infiltration of all layers of the gastric wall. Abdominal nodes removed at the time of operation showed the normal architecture to be completely replaced by a homogeneous sheet of lymphocytes consistent with a diagnosis of lymphatic leukemia. Ulceration of the gastric mucosa is extremely rare in lymphatic leukemia involvement of the stomach. When present it is almost always of a superficial type.

Missouri State Medical Assn. Journal, St. Louis

47:733-788 (Oct.) 1950

Recent Advances in Treatment of Cardiovascular Disease. A. R. Barnes. —p. 733.
Prolonged Labor. H. E. Schmitz, C. J. Smith and N. J. O'Dea.—p. 740.
Tuberculosis Survey in General Hospital. S. A. Levey.—p. 745.

47:789-868 (Nov.) 1950

Recent Concepts of Rheumatoid Arthritis. O. Abel Jr.—p. 805.
Carcinoma of Urinary Bladder: Evaluation of Present Trends of Treatment. J. J. Cordonnier.—p. 809.
Use of Calcibronat in Relief of Annoying Symptoms Associated with Various Skin Conditions. W. Parker.—p. 812.
Genesis of Homosexuality. N. Blackman.—p. 814.
Surgical Treatment of Carcinoma of Cervix. J. W. Kelso.—p. 817.
Method of Bile Collection from "T" Tube Drainage of Common Bile Duct. E. J. Schewe Jr.—p. 820.

New England Journal of Medicine, Boston

243:549-582 (Oct. 12) 1950

*Pneumoperitoneum in Treatment of Pulmonary Emphysema. M. G. Carter, E. A. Gaensler and A. Kyllonen.—p. 549.
Adverse Effect of BAL in Case of Subacute Arsenical Polyneuritis, with Observations on Porphyrin Metabolism. J. H. Sands, B. Berris and L. R. Scherer.—p. 558.
Cervical Osteomyelitis and Urinary-Tract Infection Caused by Escherichia Coli. A. Hurwitz and H. A. Albertson.—p. 562.
Fungous Diseases in the Boston Area. J. G. Downing, J. W. Baird and D. Paci.—p. 564.
Tuberculosis. D. S. King.—p. 565.

Pneumoperitoneum in Pulmonary Emphysema.—The first three patients in whom Carter and his co-workers observed the effect of pneumoperitoneum were being treated for pulmonary tuberculosis. All had severe dyspnea when pneumoperitoneum was stopped and felt relieved when treatment was resumed. It was then observed that they had pulmonary emphysema secondary to fibrosis in areas of tuberculous disease. This suggested the use of pneumoperitoneum for the treatment of emphysema not associated with tuberculosis. A total of 22 cases so treated are here reported. The initial insufflation was continued to 700 to 1,000 cc. and was stopped either when the patient complained of a sense of fulness or when he was no longer able to refrain from coughing. Insufflation of 500 to 1,000 cc. was then done on two occasions at two-day intervals, and the patient was discharged to the outpatient department for insufflation every two weeks. After the pneumoperitoneum was well established, 80 per cent helium plus 20 per cent oxygen was used for each treatment. Helium maintained an adequate level more effectively. The most striking effect of pneumoperitoneum was the improvement in tussive force. The airway was cleared; the constant stimulus to cough was diminished; bronchial secretions were lessened, and the general condition was improved. Pneumoperitoneum can be expeced only to improve the mechanical efficiency of functioning pulmonary tissue, but not to restore function to permanently damaged portions of the lung. Improvement may be expected in patients who have far advanced pulmonary emphysema without significant pulmonary infection. However, even patients in whom emphysema was associated with pulmonary tuberculosis or chronic bronchial infection improved because of their increased ability to clear the bronchial tree of secretions.

New Jersey Medical Society Journal, Trenton

47:453-496 (Oct.) 1950

Management of Massive Hemorrhage from Upper Gastro-Intestinal Tract. H. J. Tumen.—p. 455.
Ectopic Pregnancy in Rudimentary Tube. Unconnected with Uterus Unicornis. F. S. Taber.—p. 464.
Management of Breech Delivery. H. F. Johnson.—p. 465.
Removal of Intra-Ocular Foreign Bodies by Anterior and Posterior Routes. A. R. Sherman.—p. 469.
Treatment of Rheumatoid Arthritis with Pregnenolone. J. A. Strazza, Jr. —p. 472.
Treatment of Rheumatoid Arthritis by General Practitioner. H. H. Tillis.—p. 475.
Hematology: Its Past and Future. L. A. Erf.—p. 479.
Miracle of Sudden Sight. B. B. Gurland.—p. 480.
Diagnosis of Cancer of Colon. H. I. Goldstein.—p. 482.
Decreasing Mortality After Gynecologic Operations. B. Tunis.—p. 483.
Bleeding Meckel's Diverticulum. Report of Case in 18-Month Old Infant. T. V. Morton Jr., G. L. Kline and N. Zuckerberg.—p. 486.

New Orleans Medical and Surgical Journal

103:141-180 (Oct.) 1950

Recent Advances in Diabetic Therapy. A. A. Herold Jr.—p. 141.
Rational Treatment of Diabetes Mellitus and Diabetic Coma. M. Gardberg.—p. 143.
Refraction of Diabetic Patient. P. L. McCreary.—p. 148.
Differential Diagnosis of Diabetic Retinopathy. G. M. Haik, L. A. Breffeilh and M. R. Harrington.—p. 151.
Value of Lumbar Sympathectomy in Arteriosclerotic Peripheral Vascular Disease: Analysis of 64 Cases. R. C. Lynch.—p. 155.
Factors Influencing Choice of Antibiotics in Therapy. A. B. Longacre. —p. 160.
Current Management of Actinomycosis. R. G. Holcombe and R. O. Emmett.—p. 167.
Chorionepithelioma. E. E. Dilworth, C. R. Mays and L. A. Hornbuckle. —p. 170.

New York State Journal of Medicine, New York

50:2351-2478 (Oct. 15) 1950

Rehabilitation: The Otolaryngologist and Audiology. F. L. Lederer and R. E. Marcus.—p. 2407.
Use of Superior Rectus in Operations for Blepharoptosis. L. P. Guy. —p. 2417.
Topical Medication in Otology. J. G. Waltner and W. R. White. —p. 2421.
Ocular Manifestations of Aneurysms of Circle of Willis. E. Campbell and C. W. Burklund.—p. 2427.
Causes of Blindness in New York State in Years 1946, 1947, and 1948. R. E. Meek.—p. 2433.
Some Practical Uses of Sutures in Ophthalmic Surgery. C. A. Perera. —p. 2438.
Relationship of Chronic Discoid and Disseminated Lupus Erythematosus. A. P. Wilson and J. W. Jordon.—p. 2449.
Lupus Erythematosus Disseminatus Acutum: Report and Comment on Two Unusual Cases. M. J. Costello, R. A. Havrilla and A. Bouquette. —p. 2452.
Modification of Digitoxin Action by Sodium Carboxymethylcellulose. H. M. Feinblatt, T. M. Feinblatt and E. A. Ferguson Jr.—p. 2461.

North Carolina Medical Journal, Winston-Salem

11:545-600 (Oct.) 1950

Breathlessness, Palpitation, and Dizziness as Psychosomatic Symptoms. L. C. Kolb.—p. 545.
Role of the Physician in Diagnosis of Breast Carcinoma. E. P. Pendergrass.—p. 550.
Use of Insulin and Amytal in Treatment of Certain Functional Gastrointestinal Complaints, with Particular Reference to Nausea and Vomiting. M. R. Barnes and D. Cayer.—p. 552.
Practical Method of Handling Paralyzed Urinary Bladder. V. H. Youngblood and C. A. Fort.—p. 557.
Surgical Lesions of Esophagus. W. R. Deaton Jr. and H. H. Bradshaw. —p. 559.
Studies on Experimental Leptospirosis (Weil's Disease). P. R. Beamer. —p. 566.
Prevention and Treatment of Hemorrhage in Third and Fourth Stages of Labor. J. A. Crowell.—p. 572.
Non-Surgical Treatment of Endometriosis: Preliminary Report on Use of Methyl Testosterone. R. N. Creadick.—p. 576.
Complications of Duodenal Ulcer Requiring Surgical Treatment. F. M. S. Patterson and J. J. Richardson.—p. 577.

Ohio State Medical Journal, Columbus

46:941-1036 (Oct.) 1950

*Mild Hypothyroidism: Common Diseases. H. E. Christman.—p. 965.
Benign Nervousness. L. L. Lovshin.—p. 971.
Leiomyoma of Esophagus: Report of Case with Successful Resection. W. C. Madden and E. G. Olmstead.—p. 974.
Plan of Annual Examination for Men. R. M. Watkins.—p. 976.
Uterine Fibroids as Cause for Postmenopausal Bleeding. C. H. Hendricks.—p. 978.
Immediate Supportive Treatment of Severely Burned Patient. J. Mithoefer. —p. 981.
Intestinal Obstruction Caused by Spasm of Colon—Case Report. W. D. Monger.—p. 986.
*Inguinal Herniation of Stomach: Case Report. T. F. Lewis and P. S. Ross.—p. 987.

Mild Hypothyroidism.—Christman says that, if the many patients who consult physicians with a complaint of fatigue, a relatively small number have cardiorenal disease, anemia, diabetes, tuberculosis or Addison's disease. Life situations are a little too difficult for some, and in others the fatigue can be accounted for by poor living habits. He believes that mild hypothyroidism is present in many patients who complain of fatigue. There were 138 patients with symptoms of hypothyroidism among 1,000 consecutive unselected patients seen in the author's office during a period of four years. The most frequent clinical signs in these patients were a lowered basal metabolic rate, an elevated serum cholesterol level and favorable response to thyroid therapy. Differentiation of hypometabolism from hypothyroidism is important, because hypometabolism is not benefited by desiccated thyroid and because a low basal metabolic rate may occur in healthy persons or may be a symptom of Addison's disease, hypopituitary cachexia (Simmond's disease), starvation, nephrosis, diabetes and at times undernourishment. The determination of the serum cholesterol content may be of value when the differential diagnosis is not obvious. A therapeutic trial with desiccated thyroid is also helpful in differentiation. In the series of 1,000 patients, 20 were found to have a low basal metabolic rate without hypothyroidism. The 138 patients with hypothyroidism included 79 parous and 33 nulliparous women and 26 men. The author believes that childbearing and menstruation might both be factors in the higher incidence of hypothyroidism in women. Fatigue was a symptom in all the patients with hypothyroidism, and 41 per cent of all patients complaining of fatigue were found to have hypothyroidism. Dry skin and hair, brittle nails, poor cold tolerance, dyspnea, edema, hypotension, early atherosclerosis, constipation, vaginal discharge, sterility, miscarriage, dysmenorrhea, menstrual irregularities, impotence, headache, muscle and joint pains and stiffness and macrocytic or hypochromic anemia were less common symptoms. The blood cholesterol level was consistently elevated. Symptoms, signs and laboratory abnormalities are corrected by desiccated thyroid.

Inguinal Herniation of Stomach.—Lewis and Ross present the history of a man, aged 69, who had two large hernias. This case is unusual because first, direct inguinal hernia rarely occurs before the age of 40. These hernias had existed since the patient was 20 years old. Secondly, the right direct inguinal hernia contained part of the stomach and of the duodenum and loops of upper jejunum. Herniation of the stomach, while occurring in diaphragmatic and umbilical hernia, has rarely been reported as occurring in an inguinal hernia. In addition, a large portion of the ileum was present in a similar hernia on the left side, so that it may be said that much of the patient's main digestive tract was situated extra-abdominally. In spite of this extreme abdominal visceral dislocation, this patient had lived several decades with only periodic digestive upsets. He was able to reduce but not restrain the hernias and suffered severe nutritional upsets only in the last year of his illness. Since successful surgical correction of this condition, the patient has been completely asymptomatic and his nutritional status has improved.

Philippine Medical Association Journal, Manila

26:339-396 (Aug.) 1950

Studies on Schistosomiasis: Progress Report on the Philippine Campaign as of June 30, 1950. T. P. Pesigan.—p. 339.
Report of National Blood Program. R. Y. Atienza and O. Buensuceso. —p. 349.
Ideals and Problems of Philippine Ophthalmology. G. de Ocampo. —p. 355.
Leprosy—Susceptibility and Transmission. S. Chiyuto.—p. 363.
Recent Trends in Public Health in the United States and in the Philippines. C. S. Gatmaitan.—p. 367.

Postgraduate Medicine, Minneapolis

8:251-344 (Oct.) 1950

*Disturbances of Gastrointestinal Function Following Partial Gastrectomy. E. E. Wollaeger.—p. 251.
Carcinoma of Large Bowel. W. W. Babcock.—p. 260.
Prognosis of Coronary Heart Disease. W. G. Leaman Jr.—p. 267.
Surgical Treatment of Bronchiectasis. G. P. Rosemond.—p. 271.
The Ulcer Problem. I. S. Ravdin.—p. 281.
Use of Pentobarbital Intravenously. H. M. Ausherman and O. B. Crawford.—p. 287.

Disturbances of Gastrointestinal Function After Gastrectomy.—Wollaeger says that most patients who have undergone extensive resection of the stomach experience surprisingly little, if any, impairment of health. A few patients, however, may complain of loss of weight or inability to gain weight, even though the disease for which they underwent operation has been eradicated. Others may suffer from the so-called dumping syndrome. When the reservoir function, the trituration of food and the digestion are impaired by gastrectomy, an abnormal burden is thrown on the small intestine, which is forced to deal with poorly prepared food materials. In a patient who has undergone partial gastrectomy with a Polya anastomosis, the burden on the small intestine is further increased by the fact that food leaving the stomach does not pass through the duodenum and is therefore not thoroughly mixed with bile and pancreatic juice, since the duodenum and upper part of the jejunum have been completely sidetracked. The authors made intake-excretion studies on patients who had undergone this operation. They found that, whereas in

most patients the small bowel is able to compensate almost completely for the added burden that the loss of the stomach imposes, in some cases this compensation is deficient, and excessive quantities of fat may be lost in the feces even when a diet only moderately high in fat is ingested. Patients with these greater degrees of steatorrhea are likely to lose excessive quantities of nitrogen in the feces. The differences among patients in respect to fecal fat loss follow gastrectomy are not readily explainable on the basis of difference in operative technic. Furthermore, there is no satisfactory way of predicting preoperatively which patients may manifest this lack of compensation. The author cites studies carried out by Hertel on dogs and describes case histories that support the idea that abnormal gastrointestinal motility plays a role in the pathogenesis of steatorrhea. Studies were made also on patients who had undergone partial gastrectomy with a Billroth I type of anastomosis, in which the remainder of the stomach is joined to the duodenum. The evidence obtained suggests that partial gastrectomy with anastomosis of the remaining portion of the stomach to the duodenum is followed by less disturbance of gastrointestinal function than is partial gastrectomy with anastomosis to the jejunum, even though the same amount of stomach has been resected.

Public Health Reports, Washington, D. C.

65:1315-1350 (Oct. 13) 1950

Tularemia: Geographical Distribution of "Deerfly Fever" and Biting Fly, Chrysops Discalis Williston. W. L. Jellison.—p. 1321.
Detection of Diabetes in Nutrition Survey—Study of 550 Persons in Ottawa County, Michigan. E. C. Tabor and K. H. Frankhauser. —p. 1330.
Dental Caries in Morphine Addicts—as Determined by Clinical and Radiographic Examination. F. E. Law and J. W. Rüble.—p. 1336.
New Coli O-Antigen Group. W. H. Ewing and F. Kauffmann.—p. 1341.

Southern Medical Journal, Birmingham, Ala.

43:839-920 (Oct.) 1950

Carcinoma of Male Urethra. H. A. O'Brien, J. D. Mitchell Jr. and E. C. St. Martin.—p. 839.
Pneumothorax Failure as Indication for Resection in Pulmonary Tuberculosis. A. J. Beatty, P. Ottosen and C. A. Brasher.—p. 844.
One Hundred Consecutive Trochanteric-Fractures of Hip. C. F. Montgomery.—p. 848.
Mycetoma Pedis: Madura Foot: Report of Case. W. S. Quinland and J. W. Chenault.—p. 851.
Rheumatic Heart Disease and Subacute Bacterial Endocarditis Associated with Hodgkin's Disease: Analysis of Case. T. W. Hutson Jr.—p. 855.
Extreme Calcinosis Interstitialis: Report of Case. M. Moore Jr. and C. L. Clarke.—p. 861.
*Hereditary Ovalocytosis: Study of Four Members in One Family. B. Fisher, A. Rainer and C. M. Gillikin.—p. 863.
*Treatment of Myasthenia Gravis with Tetraethyl Pyrophosphate. W. J. Atkinson Jr.—p. 865.
Torsion of Testicle: Case Report. C. W. Morse and R. Smoot.—p. 866.
Clinical Experience with Sulfisoxazole (Gantrisin®). A. B. Weir Jr. —p. 868.
*Effect of Local Application of Synthetic Cortisone Acate on Lesions of Iritis and Uveitis, of Allergic Dermatitis, and of Psoriasis. T. D. Spies and R. E. Stone.—p. 871.
Conservative Termination of Pregnancy Versus Cesarean Section for Severe Preeclampsia and Eclampsia. H. W. Johnson and J. L. Spezia. —p. 874.
Controversial Issues in Breech Presentation. S. V. Ward and T. B. Sellers.—p. 879.
Use of Male Frog in Test for Pregnancy. E. G. Waldrop and M. F. James.—p. 886.
Dysmenorrhea and Pelvic Autonomic System. W. Bickers.—p. 889.
Variables in Industrial Absenteeism. R. L. Wells.—p. 893.
Follow-Up Problems Encountered in the 1948 Poliomyelitis Epidemic in North Carolina: Brief Description of Procedures Adopted to Meet the Public Health Issues Involved. G. M. Cooper.—p. 900.
Current Status of Films in Medical Teaching. R. P. Walton.—p. 903.
Wilms Tumor: Analysis of 39 Cases Seen at Duke Hospital in the Past 18 Years. D. W. Goddard.—p. 906.
Histoplasmosis: Review and Report of Cases Seen at Children's Hospital. J. A. Little.—p. 909.

Hereditary Ovalocytosis.—Fisher and co-workers report a Negro aged 27 who was hospitalized for symptoms not related to the hematopoietic system. The peripheral blood of the patient contained numerous oval-shaped and rod-shaped erythrocytes. A differential blood count of 1,000 red blood cells showed that 68.8 per cent were oval, 15.2 per cent were rod-shaped and 16 per cent were normal. No anemia or other hematological abnormality was observed. Because of the hereditary nature of this disorder, the patient's father, a sister and a paternal aunt were studied, but they did not have the trait. No one from the maternal side of the family was available for study.

Tetraethyl Pyrophosphate in Myasthenia Gravis.—Atkinson reports a woman aged 42 with myasthenia gravis who had been treated for three years with neostigmine. The initial dose of the drug was 15 mg. by mouth three times a day. It was gradually increased to 15 mg. 15 times a day. The patient was bedfast in spite of neostigmine therapy and had great difficulty in swallowing and breathing. Treatment with tetraethyl pyrophosphate was instituted with an initial dose of 2 mg. before neostigmine therapy and four hours after the last dose of neostigmine. After the second dose of tetraethyl pyrophosphate, the patient began to feel stronger. She continued to take neostigmine as often as was necessary, and the dose of tetraethyl pyrophosphate was increased 1 mg. a day until she was given 6 mg. twice a day. The dose was then increased by 0.5 mg. a day. When a dose of 7 mg. twice a day was reached, the patient was able to discontinue taking neostigmine. When a dose of 8.50 mg. twice a day was reached, no further increase seemed necessary, since the patient was able to lead an almost normal life. She was given 1.75 Gm. of atropine after each dose of tetraethyl pyrophosphate. The patient did not note any unpleasant side effects of tetraethyl pyrophosphate except for unusually large amounts of saliva. The value of tetraethyl pyrophosphate for the treatment of myasthenia gravis is emphasized.

Local Application of Cortisone.—Spies and Stone treated two patients with rheumatoid arthritis associated with iritis and uveitis, two with articular disability and allergic dermatitis and two with typical chronic psoriasis, by local application of synthetic cortisone acetate. All six had failed to respond to the use of three distinct antihistaminic substances. The eyes of the patients with iritis and uveitis appeared normal by the sixth day of local application of an ophthalmic ointment containing 25 mg. of cortisone acetate per gram. Allergic dermatitis subsided completely after 13 days of daily applications of cortisone acetate ointment. The patients with psoriasis were given three courses of cortisone acetate by intramuscular route, with doses of 1,200 mg., 300 mg. and 375 mg., respectively. From the time cortisone therapy was instituted to the end of the third period of injections (nine weeks), the lesions had subsided from 70 to 95 per cent. The most pronounced clearing was in the scalp lesions and the surfaces of the elbows. To one of the lesions, which measured 3 by 2 cm. and was located below the knee, cortisone ointment containing 5 mg. of cortisone acetate per gram was applied twice daily. After 24 days of treatment, this lesion showed as much healing as had followed cortisone injections, whereas the untreated lesions were unchanged or had become severer. It is of great importance in understanding the pathogenesis of the conditions treated by cortisone acetate that it could be effective without any measurable change in other lesions of the body. Results obtained in these patients support the hypothesis that cortisone plays a fundamental role in the enzymatic processes of all cells, thus offering intriguing opportunities for practical therapeutic application.

Wisconsin Medical Journal, Madison

49:881-972 (Oct.) 1950

Should the General Hospital Provide Psychiatric Services? C. L. Kline. —p. 901.
Subcutaneous Administration of Mercuhydrin (Meralluride Sodium Solution). O. O. Meyer and D. M. Kurth.—p. 904.
The Massachusetts Vision Test—Two Years in Fond du Lac. F. J. Cerny and J. Scheer.—p. 907.
Clinical Differentiation of Acute Appendicitis and Regional Enteritis. M. Wagner.—p. 909.
Diagnosis and Treatment of Syphilis. G. A. Cooper.—p. 911.
Retroperitoneal Lipomata: Report of Two Cases. J. L. Ford and V. J. Hittner.—p. 915.
Vaginal Smear: Its Value in General Practice. J. B. Miale and J. A. Gunn.—p. 918.

FOREIGN

British Medical Journal, London

2:903-960 (Oct. 21) 1950

Value of Genetics in Medicine. L. S. Penrose.—p. 903.
Absorption of Vitamin B_{12} in Pernicious Anaemia: I. Oral Administration Without Source of Intrinsic Factor. C. C. Ungley.—p. 905.
Id.: II. Oral Administration with Normal Gastric Juice. C. C. Ungley.—p. 908.
Id.: III. Failure of Fresh Milk or Concentrated Whey to Function as Castle's Intrinsic Factor or to Potentiate Action of Orally Administered Vitamin B_{12}. C. C. Ungley.—p. 911.
Id.: IV. Administration into Buccal Cavity, into Washed Segment of Intestine, or After Partial Sterilization of Bowel. C. C. Ungley.—p. 915.
Acute Intussusception in Childhood. J. Spence and D. Court.—p. 920.
Activity in Advancing Years. M. W. Warren.—p. 921.
Use of Intravenous Amphetamine Sulphate in Acute Barbiturate Poisoning. J. D. N. Nabarro.—p. 924.
Pregnancy in Rudimentary Horn of Bicornuate Uterus. D. Latto and R. Norman.—p. 926.

Clinical Science, London

9:259-354 (Aug. 31) 1950

Observations on Distribution of Subcutaneous Fat. D. A. W. Edwards.—p. 259.
Effect of Arterial Occlusion and Venous Congestion upon Limb Pain. H. St. C. C. Addis, R. P. Jepson and J. H. Kellgren.—p. 271.
Addisonian Pernicious Anaemia: Confirmatory Evidence of Factor Inhibiting Erythropoiesis. R. B. Thompson.—p. 281.
Inhibitory Factor in Pernicious Anaemia Serum. L. G. Lajtha.—p. 287.
*Observations on Structure of Clubbed Fingers. R. R. H. Lovell.—p. 299.
Quantitative Study of Response to Cold of Circulation Through Fingers of Normal Subjects. A. D. M. Greenfield and J. T. Shepherd.—p. 323.
Average Internal Temperature of Fingers Immersed in Cold Water. A. D. M. Greenfield, J. T. Shepherd and R. F. Whelan.—p. 349.

Structure of Clubbed Fingers.—Lovell says that although clubbing of the fingers has been recognized for centuries, the pathogenesis has remained a matter of speculation. There is little agreement on the nature of structural change in the ends of the clubbed fingers. He studied clubbed fingers in patients during life and after death. The earliest and most constant change is in the nail bed. The distal segment volumes of 14 normal fingers, 10 clubbed fingers associated with bronchopulmonary diseases and eight clubbed fingers associated with cyanotic congenital heart diseases were measured before and after compression with an elastic bandage. The reduction in volume was regarded as an index of the volume of blood in the distal segment. This was significantly greater in the congenital heart group than in the normal and bronchopulmonary groups. In one case of suppurative pneumonia and one of bacterial endocarditis clubbing regressed following cure by penicillin. Apparently the volume of blood in the distal segment of the finger is increased in clubbing due to congenital heart disease but not in clubbing from bronchopulmonary disease. The peculiar shape of the clubbed fingers appears to be due to an increase in tissue, especially in the nail bed. Autopsy specimens of two normal fingers, one clubbed finger of a patient with cyanotic congenital heart disease and four clubbed fingers of patients with bronchopulmonary diseases were examined after the blood vessels had been fixed and stained. Increased fibrous tissue, especially in the nail bed, was found in all the clubbed fingers. The skin venous plexuses in the congenital heart specimen were conspicuously dilated, especially in the nail bed. The dilatation of the veins in clubbing due to congenital heart disease, but not in bronchopulmonary disease, was confirmed by measurements. The chief component of clubbing in all the diseases studied was an increase in the connective tissue in the clubbed segment of the finger, particularly between the nail and the phalanx. In congenital heart disease an additional component was increased blood volume in the venous plexus, a feature that may perhaps be correlated with increased total blood volume. The connective tissue increase seems to be due to increased blood flow in excess of local physiological needs, and its location in the distal finger segment is attributed to the predominance there of arteriovenous anastomoses.

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

Irish Journal of Medical Science, Dublin

297:401-440 (Sept.) 1950

Streptomycin and P.A.S. in Pulmonary Tuberculosis. H. J. T. Ross.—p. 401.
*Treatment of Tuberculous Lung Cavities by Speleostomy. B. O'Brien.—p. 409.
Treatment of Tuberculous Meningitis. C. J. McSweeney.—p. 418.
Some Observations on Tuberculin Reaction. E. F. James.—p. 424.

Speleostomy in Pulmonary Tuberculosis.—O'Brien states that in 1947 Mauer conceived the idea of making an opening into a tuberculous cavity by introduction of a laminaria tent with the aid of special stilet or trocar attachment. The swelling of the tent seals off the blood vessels and air passages, so that neither serious hemorrhage nor air embolism will be likely to occur. A series of tents of increasing size are used to stretch the fistula so that a wide opening can be made, through which instruments or gauze packing can be introduced. Between stretching operations, rubber tubes can be introduced through which secretions can be removed by continuous suction drainage. The gauze packing can be impregnated with potent antibiotics such as streptomycin or paraaminosalicylic acid (PAS), which are thus brought into close contact with the site of the tubercle bacillus in the cavity wall in an infinitely higher concentration than can be achieved by systemic administration. Mauer found this "chemotherapeutic tamponade of pulmonary cavities" effective in 49 of 52 cases. O'Brien practiced this method in 17 patients, most of whom are still undergoing the treatment. The method provides a means of treating cavities that are untreatable by other methods, and an alternative to a more drastic intervention in certain cases. It is technically a difficult procedure. The patient must remain in an institution six months or more, but, on the whole, the operative risks would appear to be slight and worth incurring in view of the hopeless nature of the disease. Of the present series of patients, only three might equally well have been treated by radical surgery. The remainder had no choice except chronic invalidism with the prospect of an early death, or speleostomy.

Journal of Laryngology and Otology, London

64:547-610 (Sept.) 1950

Displacement Therapy in Chronic Suppurative Otitis Media. W. O. Reid.—p. 547.
Extended Schwartze (Cortical) Mastoid Operation in Treatment of Chronic Mastoiditis in Children. J. F. Birrell.—p. 554.
Scleroma: Report of Two Cases. R. S. Lewis and D. Ranger.—p. 561.

South African Medical Journal, Cape Town

24:749-776 (Sept. 9) 1950. **Partial Index**

*Arthrodesis of Wrist Joint: Analysis of 48 Operations. W. T. Ross.—p. 755.
Brachial Plexus Block with Amethocaine Hydrochloride: Report on 1,000 Cases. M. S. Kramer.—p. 757.
Electrocardiographic Changes in Syndrome of Malignant Malnutrition: Preliminary Report. E. Janssen and J. S. Le Roux.—p. 762.

Arthrodesis of Wrist Joint.—This analysis by Ross deals with 48 operations (on 46 patients) of arthrodesis of the wrist joint performed by various surgeons and by various technics. The object of the operation is to obtain a strong, painless grip without pronation or supination of the forearm being affected. This is best achieved by a sound, bony ankylosis of the radiocarpal and intercarpal joints, without damage to the triangular fibrocartilage or inferior radioulnar joint. The best position of the wrist joint as regards grip is about 35 degrees dorsiflexion, with a few degrees of ulnar deviation. The main symptom in most of these patients was pain, usually associated with diminished wrist movement and weakness of the grip. These symptoms were due to post-traumatic osteoarthritis in the radiocarpal or intercarpal joints. The causes of the osteoarthritis in 46 patients were as follows: ununited fracture of the scaphoid in 26 patients, comminuted Colles fracture in eight osteochondrosis of the lunate bone (Kienböck's disease) in six, severe fracture dislocation involving the wrist joint in three and gunshot wound in three. The following methods of bone grafting were used: (1) Brittain's technic of an inlay tibial graft; (2) an onlay tibial graft or (3) an onlay iliac graft, both types of onlay grafts being fixed with vitallium screws;

(4) cancellous iliac bone chips; (5) sliding radial inlay graft; (6) local bone chips, and (7) free ulnar graft. The operation resulted in improvement in 39 of the wrist joints, and 19 were not improved. Grafting with cancellous iliac bone seems to give the best results and is accepted by the authors as the best method for general use.

Thorax, London

5:207-268 (Sept.) 1950

Anatomical Study of Bronchial Vascular System and Its Variations in Disease. P. Marchand, J. C. Gilroy and V. H. Wilson.—p. 207.
Nomenclature of Broncho-Pulmonary Anatomy: An International Nomenclature Accepted by the Thoracic Society.—p. 222.
Diagnostic Thoracotomy for Solid Pulmonary Infiltrates. E. Husfeldt and C. J. Carlsen.—p. 229.
Reduction in Bronchial Subdivision in Bronchiectasis. L. McA. Reid.—p. 233.
Thoracoplasty with Plombage: Review of Early Results in 125 Cases. B. G. B. Lucas and W. P. Cleland.—p. 248.
Prognosis for Bronchial Carcinoma. A. B. Taylor and J. A. H. Waterhouse.—p. 257.

Tubercle, London

31:223-248 (Oct.) 1950

Exogenous Reinfection and Pulmonary Tuberculosis: Study of Pathology. G. Canetti.—p. 224.
Coincident Bovine and Human Tuberculosis in a Family. R. M. Todd and W. D. Gray.—p. 234.
Use of Streptomycin and PAS in Surgical Treatment of Pulmonary Tuberculosis. K. S. Mullard.—p. 236.

Deutsche medizinische Wochenschrift, Stuttgart

75:1245-1276 (Sept. 22) 1950. **Partial Index**

*Use of Prostigmin to Prevent Meningism After Spinal Puncture. N. Moschik de Reya.—p. 1245.
Habitual Abortion and Rh Incompatibility. H. Haile.—p. 1247.
Action of Arsphenamine and the Sympathetic Nervous System. V. Lundt.—p. 1250.
*Felty's Syndrome: Contribution to Differential Diagnosis of Primary Chronic Polyarthritis. M. Donner.—p. 1253.

Neostigmine for Meningism After Spinal Puncture.—Moschik de Reya points out that efforts to prevent and treat meningism after spinal (lumbar) puncture have proved difficult because its pathogenesis is not understood. Some investigators ascribe the condition to the reduction in the cerebrospinal fluid pressure, whereas others ascribe it to an overcompensated new production of cerebrospinal fluid. The fact that cerebrospinal fluid pressures were increased during the time when symptoms of meningism existed seems to corroborate that a reactive overproduction of cerebrospinal fluid is a causal factor in many cases of postpuncture meningism. It appears that the pressure fluctuations, which result from the spinal puncture, activate the stimulus receptors of the spinal meninges by a vasoneural reflex, and these in turn increase the function of the fluid-producing areas. In suboccipital puncture the conditions are different, because a negative pressure prevails in the cisterna magna and withdrawal of fluid does not cause such a decided fluctuation in pressure as in the case with the lumbar puncture. In investigation of the effect of intramuscular injection of neostigmine (prostigmin®) on the cerebrospinal fluid pressure during lumbar puncture, no signs of meningism were observed. The preventive effect of neostigmine on meningism was observed in 200 lumbar punctures. Ten minutes before the puncture, an intramuscular injection of 0.25 mg. of neostigmine was given. Only 27, or 13.5 per cent, of those given neostigmine showed symptoms of meningism, whereas among the 200 controls who had not received neostigmine 88, or 44 per cent, had symptoms of meningism. The symptoms when present were milder and of shorter duration in patients treated with neostigmine. Determination of the spinal fluid pressure of 30 patients revealed a slow but constant decrease in the pressure 10 minutes after administration of neostigmine, and this reduction in pressure was still evident after 30 minutes. The author concludes that a reactive hypertension of the cerebrospinal fluid is the essential cause of meningism. The increased susceptibility to postpuncture meningism on the part of persons with a deficient vasosympathetic system and the higher tolerance of patients with tabes or dementia paralytica seem compatible with this theory.

Felty's Syndrome and Differential Diagnosis of Primary Chronic Polyarthritis.—Donner lists chronic polyarthritis, splenomegaly and leukopenia as necessary symptoms of Felty's syndrome and increased temperature, moderate anemia, brownish-yellow pigmentation, enlargement of the lymph nodes and achylia as possible symptoms. Search for a definite causal organism in the author's clinic was fruitless. Because a slow sepsis due to Streptococcus viridans had been suggested, a search was made for endothelial cells in the blood stream, as found in endocarditis lenta; this search also proved futile. Absence of involvement of the heart valves and absence of microembolisms seem to be further proof against the causal role of Str. viridans. The author believes that no specific organism is the cause, but that, as in other rheumatic disorders, a special predisposition of the mesenchyma plays a part. This condition of the mesenchyma may be brought about by various factors, such as familial tendency to allergy, endocrine factors and conditions of the central and peripheral nervous system (symmetrical appearance of articular lesions). Disorders in the body proteins might play a part. In the author's patients, there were deviations in the albumin-globulin ratio and an increase in fibrinogen. Hyaluronidase activity may also play a part in the syndrome. In the differential diagnosis of Felty's syndrome, Still's disease deserves special consideration; however, Still's disease is found in children, and Felty's syndrome is found chiefly in women between 40 and 50 years of age. Sjögren's syndrome and Reiter's disease are easily differentiated. Search for an infectious focus and its elimination is of primary importance in the treatment. The use of aminopyrine and sulfonamides is inadvisable, because of the severe leukopenia. The joint symptoms are not benefited either by conservative measures or by splenectomy. Sulfur iodide, gold, thorium x and autovaccines proved ineffective. Physical therapy produced slight temporary improvement. Splenectomy is followed by an increase in leukocytes, and this banishes, at least temporarily, the danger of panmyelophthisis; however, only a few investigators observed a favorable effect on the joint symptoms.

Medizinische Klinik, Munich

45:1265-1296 (Oct. 6) 1950. **Partial Index**

Pathogenesis and Treatment of Sciatica and of Prolapse of the Nucleus Pulposus with Special Consideration of Presacral Procaine Hydrochloride Anesthesia According to Pendl. J. Weinforth.—p. 1275.
Crural Ulcer and Eczema: Difference in Occurrence on Right and Left Leg. Remarks on Treatment. C. M. Hasselmann.—p. 1277.
Oral Poisoning with Indelible Pencil: Question of Resorption. W. Oelssner. F. Lickint and G. Müschner.—p. 1282.
*Skimmed Milk Digested with Trypsin as Bacteriologic Culture Medium. T. Messerschmidt and W. Pöhlig.—p. 1284.

Skimmed Milk Digested with Trypsin as Culture Medium.—Messerschmidt and Pöhlig assert that the peptone culture mediums, which are obtained by digestion with pepsin, are poor media for bacterial cultures and that pathogenic microorganisms require proteins that have been treated with trypsin. When these tryptopeptones are used, bacterial growth does not require the addition of bouillon. The authors describe the preparation of a tryptopeptone from skimmed milk that they found particularly suitable for the culture of typhoid, paratyphoid and enteritis organisms.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

94:2653-2720 (Sept. 16) 1950. **Partial Index**

*Poliomyelitis After Vaccination. A. Verjaal.—p. 2665.
Treatment of Otogenic Brain Abscess. W. H. Struben.—p. 2669.

Poliomyelitis After Vaccination.—Verjaal reports on two children who had been vaccinated and in whom poliomyelitis developed. There was paralysis in the extremities into which the injection had been made. He reviews the literature, with particular attention to British reports. He stresses that vaccinations against smallpox, whooping cough, diphtheria and other infectious diseases may be complicated by poliomyelitis with paralysis of that part of the body into which the injection was made.

Revista Clínica Española, Madrid

38:247-322 (Aug. 31) 1950. **Partial Index**

*Nitrogen Mustard in Treatment of Rheumatoid Arthritis. C. Jiménez Díaz, A. Merchante and others.—p. 261.

Rheumatoid Arthritis.—Jiménez Díaz and collaborators treated 14 patients with rheumatoid arthritis with nitrogen mustard. Eleven patients were given 4 mg. of the substance every other day, for six days. Three patients were given 5 mg. every other day for 10 days. Leukopenia and anemia developed in these three, but they improved after blood transfusions. No complications occurred in the 11 patients who were treated for six days only. All 14 patients showed improvement in their rheumatic disease. The improvement was pronounced in nine patients who were in the group treated for six days.

Schweizerische medizinische Wochenschrift, Basel

80:1045-1064 (Sept. 30) 1950. **Partial Index**

Contribution to Problem of Crush Syndrome. P. Loustalot.—p. 1045.
*Experiments with Extracts of Preserved Bone Tissue: Preliminary Report. H. Roth.—p. 1051.
Morphology and Function of Athletic Heart. F. Koepplin.—p. 1053.

Extracts of Preserved Bone Tissue.—According to Roth, the classical osteoblastic concept of osteogenesis has been replaced by the concept of metaplasia. The latter theory considers new growth of bone as a differentiation of a pluripotent mesenchymal germinal tissue. The ultimate causes and moving forces of this differentiation are not fully known, but it seems likely that an "osteogenetic substance," which may be obtained by alcohol extraction from the matrix of bone, may play an important part. Seventy-two experiments were carried out on rabbits to whom intramuscular injections of extracts of various bones were given, the effects of which were examined at necropsy of the animals killed 41 to 44 days after the injections. Positive results were observed with extracts from fresh bones in a large number of animals, in which heterotopic new growth of bone was observed. Positive results were also obtained with extracts from bones that were stored at a temperature of 0 C. for five days. Less satisfactory results were obtained with extracts from bones that were stored at —40 C. Extracts from macerated or boiled bones did not give positive results. Preservation of the osteogenetic substance is a decisive factor in the preservation of bone.

Semaine des Hôpitaux de Paris

26:3965-4018 (Oct. 14) 1950. **Partial Index**

Recent Conquests Concerning Pulmonary Emphysema. R. Tiffeneau and P. Drutel.—p. 3965.
*Clinical Considerations on First French Epidemic of Tularemia. V. de Lavergne, L. Pierquin, J. Helluy and R. Dornier.—p. 3978.
Objective Tests Furnished by Electrical Examination in Chronic Occupational So-Called Carbon Monoxide Poisoning: Treatment with Iodine Dielectrolysis. G. Bourguignon, F. Benoist and A. Bourguignon.—p. 3990.

Tularemia Epidemic in France.—De Lavergne and co-workers report on 80 cases of tularemia that occurred in an epidemic in the eastern regions of France during the last three months of 1949 and the first three months of 1950. Many sick or dead rabbits were simultaneously observed on the countryside. A contact with rabbits was established in 68 of the 80 patients, but not in the remaining 12, several of whom worked in the woods and had mild skin lesions on their hands. Soiled plants or animals other than the sick rodents may transmit the infection. Except for poor skin condition, there appears to be no predisposing cause. No age or sex disposition was noted. Four main clinical types of the disease were observed, with 54 patients presenting the brachial form, 11 the pharyngeal, four the conjunctival and nine the febrile form, with fever as the predominant symptom in the absence of cutaneous lesions and adenopathy. Two patients had unusual types of the disease. One patient had a positive serum reaction in the absence of any clinical symptoms, and the other had inguinal adenopathy as the initial symptom, a strongly positive serum reaction and suppuration of the inguinal lymph nodes. Clinical diagnosis is suggested by fever, acute headache and malaise, severe conjunctivitis and ulcerous pharyngitis. Unilateral adenopathy associated with mucocutaneous lesions is highly characteristic of the disease. Chronic suppuration of enlarged lymph nodes was a common observation. Early diagnosis may be established by the tularine test, consisting in intracutaneous injection of 0.1 cc. of a diluted endotoxin obtained from Pasteurella tularensis. Serum diagnosis should not be attempted too early, since positive results cannot be expected before the eighth to the fifteenth day of the disease and occasionally not before one month. A positive agglutination titer may be still obtained within one year after recovery from the disease. The causative agent is not present in the pus obtained from involved lymph nodes. Inoculation of pus of 28 patients into animals gave negative results in 27 instances and a positive result in one. Streptomycin administered intramuscularly in doses of 1.5 Gm. per day exerted a favorable effect on the fever, the systemic disturbance and the mucocutaneous lesions; it was less effective with regard to the adenopathy. Puncture of the lymph nodes and aspiration of pus followed by injection of several cubic centimeters of a solution of 50,000 units of streptomycin per cubic centimeter was practiced two to three times per week. Suppuration was checked by several punctures in favorable cases, but moderate swelling and induration persisted for two to three months. Aureomycin was not well tolerated. Chloramphenicol (chloromycetin®) had a favorable effect on the fever but was not more effective than streptomycin.

Wiener klinische Wochenschrift, Vienna

62:749-764 (Oct. 6) 1950. **Partial Index**

Contribution to Causes of Hemophilia. J. Schmid.—p. 752.
*Use of Nitrogen Mustard in Carcinoma. W. M. Kreiner and L. Bauer.—p. 756.

Nitrogen Mustard in Carcinoma.—Kreiner and Bauer used nitrogen mustard for 11 days in the treatment of 12 patients between the ages of 25 and 80 who had inoperable carcinoma. Five milligrams of methyl-bis-(β-chloroethyl) amine hydrochloride dissolved in 20 cc. of sodium chloride solution were administered intravenously on the first, second, fourth, fifth, seventh, eighth, tenth and eleventh day. The injections were omitted on the third, sixth and ninth day. The course was repeated after an interval of two weeks and after a previous control of the blood picture. A preparation of sodium salts of the pentose nucleotides (nucleotrat®), similar to pentnucleotide, and repeated blood transfusions were given before the administration of the nitrogen mustard to bring the number of erythrocytes to 4,000,000 and the leukocytes to 4,000. Treatment with nitrogen mustard should not be instituted before this blood picture has been established or before the general condition of the patient has been restored after surgical intervention. The stabilizing effect of the nucleotrat® on the leukocytes is emphasized. Liver, pteroylglutamic acid and pyridoxine preparations are recommended in the aftertreatment. Primary tumors did not respond to nitrogen mustard, while metastases showed a satisfactory response in some instances and proved refractory in others. Temporary improvement and psychic recovery resulted in nearly every instance. Nitrogen mustard was particularly effective in bone metastases, in liver metastases and in those of lymph nodes. Metastases in the same organs and of the same specificity responded differently in different patients. Postoperative prophylactic treatment with nitrogen mustard combined with other methods of treatment is recommended for patients who have been operated on for carcinoma. Patients between the ages of 70 and 80 with anemia and emaciation tolerated nitrogen mustard less well than younger patients. Irradiation treatment was discontinued in one case because of the poor general condition and the apparent ineffectiveness of the treatment. It could be resumed after treatment with nitrogen mustard. It should be considered that tumors may become sensitive to irradiation as the result of nitrogen mustard therapy.

BOOK REVIEWS

Pathology in General Surgery. By Paul W. Schafer, M.D. The University of Chicago Committee on Publications in Biology and Medicine. Cloth. $17.50. Pp. 581, with 495 illustrations. University of Chicago Press, 5750 Ellis Ave., Chicago 37; Cambridge University Press, Bentley House, 200 Euston Rd., London, N.W.1, 1950.

This well arranged book is written around a large series of excellent illustrations, the majority of them photomicrographs in color. Well chosen colored pictures of gross specimens and some reproductions of roentgenograms serve as valuable supplements. The technical perfection and the careful selection of the illustrations deserve emphasis. The text itself is lucid and concise yet contains an astonishingly large amount of information. It is documented by a well selected list of references. The book consists of the description and illustration of particular diseases, listed under the headings of the various organs. A short introduction, entitled "Parietes and General Aspects," describes some tumorous and inflammatory lesions, without specific reference to their location. As the title implies, the book will be of special service to the surgeon, giving him ready reference to the conditions seen in his practice. To the student of pathology, the illustrations will be of greater value than the somewhat condensed text, which does not always do justice to the many problematic aspects of this field. This may well be a deliberate restraint, of great value to the practitioner looking for reliable and authoritative information. However, even the pathologists will find much useful information, since almost all subjects are covered well. The book can be recommended as one of the most practical of the recent publications dealing with surgical pathology.

Speaking of Man. By Abraham Myerson, M.D. Cloth. $3. Pp. 279. Alfred A. Knopf, Inc., 501 Madison Ave., New York 22, 1950.

Produced over a period of 18 years, during which Myerson rewrote much of his material again and again, this volume is a testimonial to that method of delivery. The author did not become enmeshed in a futile, dreary tangle of words, to which one of lesser character might and frequently does succumb, but instead produced a highly refined distillate of his thoughts and beliefs about the behavior of man and suggestions as to how these opinions might be applied. Although one may at times be at least momentarily shocked by Myerson's pronouncements, the logic of what he writes is always so clear and unassailable that agreement is inevitable. In many instances the point is neatly driven home with a three line story that does more than a thousand words might do.

Myerson in an early chapter considers his own prejudices and prepossessions frankly and without apology. The next chapter considers "the great unlearning" that children must experience as they face the world, and then detailed attention is given to a variety of popular fallacies. There is a chapter offering a frank appraisal of "authorities, including psychiatrists," followed by one devoted to woman, whom he identifies as the authorities' scapegoat. Other chapters include discussions of genius, heredity and environment, social ambivalence, sterilization and the liabilities of language. Especially good are his treatment of desire and mental health, survival of the fit, and mind and body.

It is regrettable that Myerson did not have the pleasure of actually completing his book. The material was assembled following his death, the order of chapters being set as nearly as possible in accordance with notes and earlier drafts he had worked on. There is a special section that traces the growth of the book through reproduction of prolonged, though not profuse, correspondence between Myerson and his publisher, in which the author's repeated return to his task is described gaily if somewhat ruefully. The book is set in a new, experimental type face that the publisher states is to be called Stuyvesant. The sample is excellent.

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

La chirurgie à deux équipes dans le traitement des cancers pelviens. Par A. Ameline, J. Huguier, P. Moÿse et Y. Chatain. Paper. Pp. 160, with 62 illustrations. Librairie Arnette, 2, Rue Casimir-Delavigne, Paris 6e [1950].

This book deals with the approach to pelvic carcinomas by means of two surgical teams. It incorporates the surgical treatment of carcinoma of the rectum, colpohysterectomy and cystectomy. A photograph representing the two teams in action is presented on page 13. It would have been well to include the position of the surgical nurse or nurses and the location of the instruments and other necessary armamentaria in this photograph. Each section includes a review of the surgical anatomy involved and lists the advantages of this method. Among the advantages, the authors state that the lack of shock, which they believe is due to the patient's being kept in one position, is most beneficial and that this two team method also permits a more thorough exploration and liberation of the lesion and the surrounding tissues.

Under the section pertaining to the amputation of the rectum in males, a small insert showing the incision could well have been included in the illustration. The small line drawings that accompany the half-tone illustrations, showing the cleavage plane in which mobilization takes place, are a commendable feature. The same operation, shown in the female, is described both with the removal of and the conservation of the uterus. A technic for resection of the rectum for lesions within 6 cm. of the anus is also described. This procedure preserves the anal sphincter. In the section on colpohysterectomy, two full page illustrations, figures 30 and 31, show the anatomy involved. Color would have made these more clear. The authors state that they prefer the Coffey technic for implantations of ureters into the colon. The illustration that depicts this step is too dwarfed, and the implantation technic is totally lost.

It has been the attempt of the authors to show the advantages of this two team approach, mainly by means of illustrations. Unfortunately, in a short work of this type many of the important anatomic relations and necessary steps of mobilization are lacking. For example, the location of the ureters is not clearly depicted. As a review of the steps in these operations, this book is valuable; however, the reader would have to be well acquainted with the procedures herein depicted.

The Meaning and Practice of Psychotherapy. By V. E. Fisher, Ph.D., Psychologist and Psychotherapist, Idaho State Hospital South, Bingham, Idaho. Cloth. $5. Pp. 411. The Macmillan Company, 60 Fifth Ave., New York 11, 1950.

This is a comprehensive commentary not only on the meaning and practice of psychotherapy generally, but also in the description and interpretation of the mental symptoms encountered in the various functional mental disorders. However, no mention is made of any of the organic types of mental disorders, and some readers may be led to believe that patients with organic mental disturbances are generally excluded from and considered not especially suitable for psychotherapy.

Exceptions can be taken to some of the author's views. He advocates "the recognizing and licensing of members of his profession" for the practice of psychotherapy. This would not appear to be a practical procedure. There exists grave doubt as to whether ancillary personnel are adequately equipped scientifically to practice this branch of medicine. Psychotherapy requires not only a knowledge of abnormal psychology, mental mechanisms and the art of counseling, but also a knowledge of the medical sciences. One could not, for instance, reasonably expect a psychologist to recognize a psychosomatic disorder as readily as the psychiatrist.

In describing the first interview or consultation with the patient, the author says that no medical prescription should be recommended at this time unless necessary. He specifically refers to the use of sedatives, adding that they should be used sparingly. While psychiatrists would not take issue with remarks the author makes concerning the judicious use of

sedatives, they would question a psychologist's prescribing medicines. While the author mentions that there is a lack of agreement as to what constitutes adequate qualifications of the therapist, one that would seem to stand out in particular is a degree in medicine.

In discussing psychoanalytic technic he cites four grave and inherent "weaknesses," as follows: 1. Psychoanalysis is characterized by a rather strange and esoteric terminology, 2. Only an essentially passive participation in the therapeutic enterprise is required of the patient and that the patient is not required to make any great effort to think for himself or to understand anything beyond the analyst's interpretations, 3. Treatment takes an unnecessarily long time and often a prohibitive amount of money, 4. The analyst's sexual interpretations are freely imposed on him, irrespective of his wishes, needs or the actual causes and nature of his ailment. With the exception of the third, these interpretations are so plainly invalid as to suggest that the author has no familiarity with recent developments in psychoanalysis.

Part 4 of the volume, dealing with some psychosocial maladjustments, should be of particular usefulness to the general practitioner. Even in this day of medical advances, there are still too many general practitioners who have little or no insight into the psychological mechanisms involved in some troubled persons suffering from impotence, frigidity, feelings of insecurity, compulsive drinking and similar difficulties.

This volume in general is a timely and worth while contribution to the library of the general practitioner. The author makes no claim that there is anything particularly new in this treatise. He is to be commended on his use of simple, clear and understandable language, which is conducive to easy and sustained reading. He is also to be complimented on the glossary and bibliography of selected reading material.

Industrial Nutrition. By Magnus Pyke, B.Sc., Ph.D., F.R.I.C., Deputy Manager, Yeast Research Outstation, The Distillers Company, Ltd., Glenochil, Clackmannanshire, Scotland. Cloth. 10s. Pp. 205. MacDonald & Evans, 8 John St., Bedford Row, London W.C.1; American Agent: Edward W. Sweetman, 1 Broadway, New York 4, 1950.

Dr. Pyke is the principal scientific officer of nutrition in the Ministry of Food of Great Britain and was closely associated with the development of industrial nutrition in Britain during World War II. He is the author of the official British Manual of Nutrition, which was first published in 1945. He has drawn on both English and American experience and research in nutrition to present a reasoned discussion of the special nutritional needs of persons working under the practical conditions of industrial life today. In this book he has reviewed the evidence showing how the different types of work carried out by persons of different ages and sexes affect their nutritional requirements and how meals can best be arranged within the varied conditions of industrial life to provide different groups of persons with their nutritional needs.

The content is solid and well arranged, with excellent tables of nutritional values of a wide variety of foods, as well as of the varying needs of working groups. This book should particularly interest caterers and dietitians but has value for all those who have a responsibility for industrial workers.

Spezielle chirurgische Diagnostik für Studierende und Ärzte. Von F. de Quervain. Tenth edition edited by Dr. Karl Lenggenhager, O. Ö. Professor der Chirurgie und Direktor der chirurgischen Universitätsklinik in Bern. Paper. 75 marks. Pp. 767, with 956 illustrations. Springer-Verlag, Reichpietschufer 20, Berlin W 35, 1950.

This book is divided topographically into sections that discuss surgical diseases of the head, neck, thorax, abdominal cavity and abdominal organs, pelvic bones and vertebral column and upper and lower extremities. Much space has been devoted to inflammatory conditions and infectious diseases. This part of the book was especially well done. The discussion pertaining to neoplasms and degenerative diseases seems to be somewhat too abbreviated. Pathology as related to surgical diseases did not receive enough space nor its proper place of importance. Many of the modern laboratory tests, which would be of definite diagnostic value, were not included. Among some of the more helpful modern tests, it would have been well to include those for cholesterol content in diseases of the thyroid and for blood amylase in pancreatitis. Such conditions as polyposis of the stomach and malignant degeneration of such lesions were almost completely overlooked. Many unusual conditions were discussed and illustrated; however, lymphoepithelioma of the nasopharynx was not mentioned.

The section on the esophagus, although well written, could have been improved if some mention had been made of benign tumors. The section on thyroid disease was nicely written, and particularly well handled in this section was the classification of thyroid diseases and the indications of thyroidectomy. In the discussion of diseases of the breast, the author opposes the taking of biopsy specimens since the lesion might be missed and the disease process might be spread. He advocates, however, removal of the entire mass with frozen sections. The subject of jaundice should have been given more importance. Particularly good features of the book were the illustrations and the correlation of the clinical picture with roentgenograms. The book is well written, and it can be recommended as a reference book for medical students and those interested in general surgery.

Charles Darwin's Autobiography with His Notes and Letters Depicting the Growth of the Origin of Species. Edited by Sir Francis Darwin. And an Introductory Essay, "The Meaning of Darwin," by George Gaylord Simpson. Cloth. $3.50. Pp. 266, with portrait. Henry Schuman, Inc., Publishers, 20 E. 70th St., New York 21, 1950.

This book, an interesting and readable study of Charles Darwin as a scientist, centers on a short autobiographical sketch in which Darwin traced the development of his mind and character in the same dispassionate manner that he applied to his scientific observations. Intended originally only for his children, this sketch brings out again and again the perseverance and industry of that great scholar and his unfailing intellectual honesty. These qualities are again brought forth in a series of reminiscences of Charles Darwin's everyday life, written by his son, Sir William Darwin, and in a number of letters written by Charles Darwin to various contemporaries, in which is embodied the development of his great book "Origin of Species." An essay on the meaning of darwinism by Dr. George Gaylord Simpson, chairman of geology and paleontology at the American Museum of National History, serves as an introduction to this stimulating little book.

The Genealogy of Gynaecology: History of the Development of Gynaecology Throughout the Ages 2000 B. C.-1800 A. D. with Excerpts from the Many Authors Who Have Contributed to the Various Phases of the Subject. By James V. Ricci, A. B., M.D., Clinical Professor of Gynaecology and Obstetrics, New York Medical College, New York City. Second edition. Cloth. $8.50. Pp. 494. The Blakiston Company (Division of Doubleday & Company, Inc.), 1012 Walnut St., Philadelphia 5, 1950.

This is a valuable book for several reasons. First, it is unique in the attempt to gather together the earliest threads of thought of medical men on the problems of obstetrics and gynecology that are still being studied today. Second, it presents the evidence of the evolution of our ideas on these subjects from superstition and hearsay tradition down to present day scientific experimentation and research. Third, interwoven with the gynecologic substrate is a commentary on related arts and the political structure of the times, and interesting correlations between the two are pointed out. Dr. Ricci has selected important references from the known world medical history that show us the advancement of medical thought and knowledge from prehistoric time down through Egyptian, Greek, Indian, Arabian, Persian, Syrian and Jewish medicine. He then covers the renaissance and the seventeenth and eighteenth centuries.

The enormous amount of work involved in compiling the references alone stamps the author as a scholar of the first rank. The book is extremely valuable as a reference work and has the additional merit of historically calling our attention to the fallacies in thinking by the best medical minds of all ages, which should act as an antidote to some of the dogmatic teachings of the present. Technically, the book is well done, and the print, binding and paper are outstanding. Carefully selected illustrations from old texts are beautifully reproduced. The book should be in all medical school libraries and is valuable for reference for any obstetrician or gynecologist doing productive work.

QUERIES AND MINOR NOTES

RECOVERY FROM BRUCELLOSIS

To the Editor:—*A 44 year old white man had three or four grippelike episodes with negligible clinical findings. The result of a blood agglutination test for brucellosis was positive (1:3,200), and the skin reaction was positive to the point of localized necrosis. After treatment with chloramphenicol, 1 Gm. every eight hours for 10 days, the titer was reduced to 1:1,600 and the patient was asymptomatic. Six weeks later, a second course of chloramphenicol was given, with no further effect on the titer. Is the blood titer an index of cure? Should other antibiotics be given to reduce the titer? What are the criteria for "cure" of brucellosis besides an asymptomatic state, which may merely be a quiescent phase between recurrences? I would appreciate any information you might be able to send me.*

James Kaufman, M.D., Jamaica, N. Y.

Answer.—The serum agglutinin titer against Brucella is not a reliable index of recovery from brucellosis. Some asymptomatic patients who did not relapse within a five year observation period maintained high titers for a year or more before diminution was detected; hence treatment with a different antibiotic is not indicated. The criteria for "cure" of brucellosis are no more satisfactory than those for tuberculosis or vivax malaria. An asymptomatic state that is maintained for four or five years is a good provisional criterion for the estimation of the individual and relative therapeutic merits of the various antibiotics or other agents. The prompt induction of remissions is also not a reliable index of recovery. Since a proneness to relapse, greatest during the first three years but not negligible up to 15 years after apparent recovery, is characteristic of the disease, it seems wiser to suspend all judgment and to indulge in nothing beyond tempered optimism in relation to the value of all antibiotic and chemotherapeutic agents until the five year results of 100 treated patients with reliably established diagnoses become available.

SPINAL FLUID EXAMINATIONS IN POLIOMYELTITIS

To the Editor:—*I have had several patients with poliomyelitis this year; in some cases examination at various times after onset revealed the spinal fluid to be normal. I am interested in knowing whether any study has been done on daily spinal fluid changes through the course of the disease. This might give information as to when one might expect to find normal or abnormal spinal fluid.*

W. F. Holmes, M.D., Walla Walla, Wash.

Answer.—No published report of spinal fluid examinations repeated daily throughout the early weeks of the disease has come to our attention. There are reports on the findings at different stages (Hammon, W. McD.: Laboratory Aids in the Diagnosis of Poliomyelitis, *M. Woman's J.* **55**:35 [March] 1948. Cumings, J. N.: The Cerebrospinal Fluid in Poliomyelitis, *Post-Grad. M. J.* **25**:19 [Jan.] 1949). Both Hammon and Cumings note that cell counts usually reach maximum during the first week and fall to normal after two to three weeks but that the rise in total protein is relatively delayed and longer sustained. Hammon states, ". . . in about 10 to 20 per cent of poliomyelitis infections with clinical manifestations of central nervous system involvement, the spinal fluid findings may be entirely normal at the time of a single examination and occasionally, but much less frequently, after repeated examination."

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

DIABETIC FEELS BETTER WITH TRACE OF SUGAR IN URINE

To the Editor:—*A man has been treated for diabetes for 16 years. When his urine is free from sugar, his blood sugar is consistently below 90 and he experiences symptoms of insulin shock. He now takes 85 units of protamine zinc insulin daily. He is beginning to get diabetic retinopathy. In a case with as low a renal threshold as this, is it best to try to keep the urine sugar free as far as untoward sequelae are concerned? He feels better when the urine shows a trace of sugar.*

M.D., Wisconsin.

Answer.—Use of protamine zinc insulin alone is commonly unsatisfactory with patients whose daily requirement for insulin exceeds 30 units. When enough protamine zinc insulin is given to control glycosuria during the daytime, its effect during the succeeding night is likely to be excessive. This is owing to the delayed action of this type of insulin. Better results are obtained with suitably proportioned mixtures of regular insulin and protamine zinc insulin. The proportion desirable is one in which the amount of regular insulin in the mixture exceeds the amount of protamine zinc insulin. In many cases a 2 to 1 proportion is satisfactory (2 of regular to 1 of protamine). Such mixtures heretofore have been unstable and so were made in the syringe at the time of the injection; but there now is available commercially a new type of insulin called NPH insulin, with an action that closely resembles a 2 to 1 mixture of regular and protamine zinc insulin. The initials stand for Neutral Protamine, Hagedorn. This new insulin, which is manufactured by Eli Lilly & Company of Indianapolis, is stable and may soon largely replace protamine zinc insulin.

The evidence provided by the inquiry is insufficient to establish in the case cited the existence of a lowered renal threshold for dextrose. The difficulty encountered is more probably explained by the type of insulin used, namely, a large dose of protamine insulin alone. In a case with an established low renal threshold some glycosuria must be permitted if hypoglycemia is to be avoided.

Opinion differs respecting the degree of rigidity of control desirable in diabetes. The majority of those whose experience warrants their speaking with authority favor rigid control, but not at the risk either of severe attacks of hypoglycemia or of the sense of well-being of the patient. The degenerative complications of diabetes—retinopathy, neuropathy, nephropathy and atherosclerosis—are observed in cases in which the control of glycosuria has been satisfactory, and, although the rate of progression of some of these complications appears to be accelerated by poor management, their close correlation with the rigidity of management has not been established.

STRABISMUS IN YOUNG INFANTS

To the Editor:—*A newborn infant has an apparent strabismus at times in one eye or the other. At times the eyes look normal. 1. Is this condition of apparent strabismus present in all newborn children? 2. Is it a temporary or permanent condition? 3. Can anything be done to prevent or correct this condition?*

M.D., New York.

Answer.—In newborn infants coordinate ocular movements are not to be expected. On the average, establishment of coordinate movements of the eyes in infants does not occur until the end of the third month of life, and occasionally incoordinate movements are observed even longer. The strabismus seen in young infants whose ocular movements are not yet coordinated are termed "spurious" squints. Occasionally true squints can be recognized from birth onward, when one or both eyes consistently deviate in a particular direction. The specific answers would, therefore, be as follows: 1. Apparent strabismus, spurious squints, are probably present in all new-

born infants. 2. The condition is temporary in most cases. Occasionally true squints can be recognized from birth. 3. Spurious squints will be outgrown. In true squint, search for refractive error should be made and, when found, corrected by proper lenses. Fusion of vision by orthoptic training should be instituted when the child is sufficiently old to cooperate. Operation may be necessary to correct severe true squint; this is usually not undertaken until the child is 4 or 5 years old.

HIGH GRADE HEART BLOCK

To the Editor:—*A white woman, aged 55, has had rheumatic heart disease since the age of 5 and diabetes for the past seven years. She had been symptomless until she had an infection in her foot. At that time diabetes was discovered. Her diabetes is controlled with 12 units of protamine zinc insulin and diet. For the past three years she has had attacks of loss of consciousness, which come at irregular intervals about five or six times per year. An electrocardiogram taken during one of her attacks revealed an Adams-Stokes syndrome. She now receives ephedrine sulfate, 11 grains (0.70 Gm.) daily in divided doses. She started with 3 grains (0.20 Gm.) per day, which was gradually increased according to the frequency of her attacks. Recently she had an attack while in bed after having been free from attacks for five months. Is any additional therapy indicated?*

Alexander E. Brody, M.D., Brooklyn.

Answer.—In this case coronary heart disease favored by the diabetes seems to have been superimposed on the rheumatic heart involvement, unless calcareous aortic stenosis has developed from rheumatic valvular disease with calcium invading the myocardium in the region of the bundle of His. In any case serious high grade heart block has become evident. Ephedrine, although mildly effective in a few cases, is often insufficient in instances of Adams-Stokes attacks. In such cases epinephrine is the treatment of choice in the dosage of 0.5 to 1 cc. of the 1:1,000 solution every few hours if necessary during periods in which fainting attacks occur frequently, but if there is an attack only every few weeks or months there is no point in giving ephedrine or epinephrine regularly. Either drug can be held in reserve. Other treatment, as with thyroid, atropine or barium sulfate, is, as a rule, disappointing. It would be of interest to omit the ephedrine sulfate for a few days to see whether it is actually of value in preventing attacks. In some patients with Adams-Stokes attacks there develops gradually a stabilized complete heart block, which may last for years without any ventricular standstill.

SULFONAMIDE CONCENTRATION IN EGGS AND CHICKEN

To the Editor:—*Sulfonamide preparations apparently have wide use in poultry ailments. I would appreciate information concerning sulfonamide concentration in both eggs and meat of fowl and subsequent potentialities for sulfonamide sensitization.*

N. E. Patrick, M.D., Factoryville, Pa.

Answer:—The plasma proteins and/or hemoglobin of chicken blood, the egg components, and presumably the cellular tissues, bind the commonly employed sulfonamides in the following increasing order: sulfaguanidine, sulfanilamide, sulfamerazine, sulfamethazine, sulfathiazole and sulfaquinoxaline. When sulfaquinoxaline was given to hens in the feed in concentrations of 0.05 to 0.0125 per cent for four days, the blood and eggs contained not more than 0.5 mg. per 100 cc. except after the 0.05 per cent feeding when the blood concentration was 3.5 mg. per 100 cc. The concentration in eggs rose gradually and reached a maximum one day later than in the blood. When the hens were again given nonmedicated feed, the blood concentration of sulfaquinoxaline decreased during a period of three days rather than a few hours, as is the usual result with a number of other sulfonamides. The potentiality for producing sulfonamide sensitization with poultry meat carrying the drug as a result of feeding in the usual quantities employed would seem relatively low. The possible hazard to already hypergic persons may be appreciably greater, but this cannot be assumed without future critical investigation.

STERILITY

To the Editor:—*A 26 year old man has a normal past history except for an injury sustained in an airplane crash in 1943, when he was hospitalized for five months. Fractures were not found, but he received "all kinds" of physical therapy for what he was told were torn muscles, most likely the short rotator muscles of the hip joints. During this time he gained much weight. He has been married three years. His wife was examined for sterility, and results of all tests were negative. He submitted to a semen examination two years ago and was told he was sterile. He has been taking 1 to 2 grains (0.06 to 0.12 Gm.) of thyroid and is on a low caloric diet. His last examination was on June 27, 1950, by a genitourinary specialist, who reported as follows. The external genitalia are normal. There is infiltration of the epididymis or vas deferens. The prostate gland and seminal vesicles are normal. A sperm test was made following ejaculation; there were 4 to 8 white blood cells per field, sperm cells in diminished numbers; all were deformed, without tails and heads and without motility. Prostatic slides revealed a limpid material, a few areas of lecithin and corpora amylacea. Are there any further examinations advisable? What treatment can you recommend?*

Earl Herron, M.D., Chicago.

Answer.—The combination of a low sperm count, no motility and 100 per cent abnormal morphology indicates a severe degree of infertility. Inasmuch as this condition was observed two years ago and still persists, one assumes that it is due not to a temporary depression of spermatogenesis but rather to permanent malfunction of the seminiferous tubules. A testicular biopsy might throw some light on the nature of the trouble. But this procedure would have little more than academic interest in the present case, since there is small likelihood of improvement with or without treatment. The couple would be well advised to make arrangements for adoption or to consider artificial insemination with donor semen.

MOUTH TO MOUTH ARTIFICIAL RESPIRATION

To the Editor:—*In the newspapers one reads of a layman "saving the life" of another human being by breathing into the mouth, with successful resuscitation resulting. What is the physiological truth of this procedure? The stricken person is already oversaturated with carbon dioxide, and that contributed by the exhaled air of the resuscitator would scarcely add anything as a stimulus to the respiratory center of the victim. The 6 per cent oxygen in the exhaled air is hardly enough to add anything to the anoxemia of the victim. The "bellows" effect of forcing air into the nonfunctioning lungs of the victim would not be as effective as artificial respiration.*

H. F. Meyer, M.D., Chicago.

Answer.—Mouth to mouth artificial respiration dates from antiquity and remains today an adequate, physiological method of resuscitation. It would probably be used even more widely if it were not esthetically disagreeable. This factor usually restricts its use to cases of infant asphyxia and desperate adult cases. The expired air of the rescuer contains over 16 volumes per cent of oxygen (normal inspired air is 20.94 volumes per cent) which is more than adequate. This same expired air contains 4 volumes per cent of carbon dioxide (normal inspired air is 0.4 volumes per cent), which is considerably less than the 7 to 10 per cent carbogen used (wrongly) by many for resuscitation. More important, the "mouth to mouth" procedure gives an adequate tidal air, which is not true of all the manual methods of artificial respiration. It is, furthermore, immediately available, requires no apparatus, can be performed by anyone and can be continued for prolonged periods of time. It has the disadvantage of the use of the supine position, in which the tongue may fall into and occlude the oropharynx.

Newer manual methods are being studied and reported. Those methods causing active inspiration and active expiration are the most efficacious, such as the Nielsen method or the hip-lift or hip-roll combined with the prone pressure (Gordon and co-workers: *J. A. M. A.* **144**:1447 and 1455 [Dec. 23] 1950). Because of the inherent hesitancy of the public to use the mouth to mouth procedures, these newer technics will probably find favor.